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OPHTHALMIA AND DIET *

THOMAS B. OSBORNE, PH.D.
AND
LAFAYETTE B. MENDEL PH.D
NEW HAVEN, CONN.

The views of ophthalmologists in regard to the etiology of the type of eye disease designated, among other names, by the terms keratomalacia and xerophthalmia, have changed from time to time under the influence of the prevailing tendencies in the study of pathology. Thus, Goldschmidt [1] has pointed out that long ago a relationship between nutritive disturbances and ophthalmia seemed to be established. With the progress of modern bacteriology, this aspect of the subject became overshadowed by the assumption that the ophthalmia is primarily an infection for which various organisms have been held responsible. More recently, however, through the investigations of the newly recognized factors in nutrition, attention has been centered once again on the possible connection between nutrition and eye diseases.

Early in our investigations of nutrition and growth, conducted on albino rats, we noticed occasional cases of eye disease which we were at first inclined to attribute to accidental infection. Attempts that we made to relieve such conditions by the local application of antiseptics, notably silver-protein combinations were not successful. Presently, however, it became apparent that, despite the common possibility of infection throughout a large colony of animals kept under the same hygienic conditions, *the eye disorders did not occur when good nutritive conditions were secured by suitable diets.*

As early as 1913, we stated in a communication indicating the superiority of butter fat over lard in the nutrition of growth, and in describing what would at the present time be recognized as the result of a deficiency of fat-soluble vitamin: "Another type of nutritive deficiency exemplified in a form of infectious eye disease prevalent in animals inappropriately fed is speedily alleviated by the introduction of butter-fat into the experimental rations." [2] Again in 1914, in referring to the unique nutritive value of cod liver oil, it was stated in regard to the effect of diets consisting of protein, carbohydrate, inorganic salts, and lard that "the failure to make early growth is accompanied by diarrhea, diminished appetite and, after three or four weeks, by inflamed eyes, which soon develop into a purulent state." This condition also was improved by the use of a source of fat-soluble vitamin. Thus:

> We "obtained uniform success by substituting cod liver oil for a portion of the lard in our standard diets. . . . Not only was growth resumed in most cases at a very rapid rate, but all evidence of malnutrition, especially the affection of the eyes, promptly disappeared." [3]

Again, in 1915, in referring to the effects of the inadequate diets it was pointed out that:

> The disturbance of growth may be attended by symptoms of malnutrition (such as infections of the eye) giving evidence of impaired resistance to bacterial invasion. Recovery promptly follows the substitution of a part of the lard of the ration by certain other natural fats. . . . Here again the purulent condition of the eyes, hitherto noted with the lard diets, also occurred with diets containing the inefficient fractions of the butter-fat and were cured by supplying the butter oil.[4]

These references, among many other allusions [5] which we have made to the subject in recent years, suffice to indicate our own attitude toward the abnormal eye manifestations with which we have become acquainted in the progress of our studies in nutrition. They associate the incidence of the malady with the lack of fat-soluble vitamin, and the relief of the condition with the inclusion of this food factor in the diet.

Even before our own observations and at a time when the vitamin hypothesis had not been formulated, observations strikingly similar to those which we have reported were put on record. Thus, Falta and Noeggerath [6] fed rats on food mixtures of casein, lard, starch, dextrose and inorganic salts and, as might now be anticipated, presently observed nutritive decline and death in their animals. They remark:

> At the beginning of the fourth week there developed in both animals a conjunctivitis with crust formation, which persisted until death. These animals, of course, were kept separated. Furthermore, from the beginning of their illness they were weighed individually.[7]

* From the Connecticut Agricultural Experiment Station and the Sheffield Laboratory of Physiological Chemistry, Yale University.

* The expenses of this investigation were shared by the Connecticut Agricultural Experiment Station and the Carnegie Institution of Washington, Washington, D. C.

1. Goldschmidt, M.: Arch. f. Ophth. **90**: 354, 1915.
2. Osborne, T. B., and Mendel, L. B.: J. Biol. Chem. **16**: 423, 1913.
3. Osborne, T. B., and Mendel, L. B.: J. Biol. Chem. **17**: 401, 1914.
4. Osborne, T. B., and Mendel, L. B.: J. Biol. Chem. **20**: 379, 1915.
5. Osborne, T. B., and Mendel, L. B.: Year Book 13, Carnegie Institution of Washington, 1915, p. 368; Proc. Soc. Exper. Biol. & Med. **12**: 92, 1915; J. Biol. Chem. **24**: 37 (Jan.) 1916; J. A. M. A. **69**: 32 (July 7) 1917; J. Biol. Chem. **32**: 369 (Dec.) 1917; **34**: 17 (April) 1918; **37**: 187 (Jan.) 1919; **41**: 549 (April) 1920. Mendel, L. B.: J. A. M. A. **64**: 1539 (May 8) 1915; Am. J. M. Sc. **158**: 297 (Sept.) 1919. Mendel, L. B., and Osborne, T. B.: Proc. Soc. Exper. Biol. & Med. **15**: 71, 1918.
6. Falta, W., and Noeggerath, C. T.: Beitr. z. chem. Physiol. u. Path. **7**: 313, 1906.
7. Im Beginn der IV. Woche entwickelte sich bei beiden Tieren eine Conjunctivitis mit Borkenbildung, die bis zum Tode bestand. Natürlich waren auch diese Tiere getrennt gehalten. Sie wurden überdies vom Beginn der Erkrankung ab in eigenen Wägegläsern gewogen.

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Again, in connection with experiments in which a different protein—ovalbumin—was employed, this comment was made:

In the course of the third week both animals, in spite of being segregated, developed conjunctivitis, and later panophthalmia, with abscess formations in the jaw and neck region. Both animals ate well until death.[8]

The foregoing experiments led Knapp[9] to reinvestigate the possible relationship between diseases of the conjunctiva and nutritional disorders. His diets were comparable to those just described. Various additions, such as nucleic acid, cholesterol and lecithin, failed to alter the tendency toward nutritive decline. Knapp describes the eye symptoms as beginning with photophobia, followed by secretion in the corners of the lids, and finally turbidity of the cornea and ulcers. He observes:

I have often made cultures of the secretion on agar and gelatin, with the development of numerous colonies of *Staphylococcus pyogenes-albus* and a few colonies—isolated—of *Staphylococcus pyogenes-aureus*, and likewise micro-organisms found normally on the conjunctiva. It should again be emphasized that the animals were kept apart in individual glass containers, thus excluding contact infection.[10]

In this connection Knapp pointed out that mere cachexia could scarcely account for the invasion of the cornea by organisms which are commonly found there in health, for the types of conjunctivitis described by him were, he states, not ordinarily seen in the usual nutritive decline. Hence he concludes that aside from the marasmus some other cause, some other injury, due to disturbed nutrition, must have been at work (dass da neben dem Marasmus noch irgend eine andere Ursache, irgend eine durch die Ernärung bedingte Schädlichkeit mitspielen dürfte). Knapp seems almost to have postulated a specific deficiency such as that of the fat-soluble vitamin, to which we subsequently related the phenomena, when he stated that:

It was not alone the premortal loss of resistance which predisposed these animals to these catarrhal inflammations, but an additional etiologic factor must be sought for in the diet, perhaps, a lack of an important element. Whether this is the case, and the nature of this element or substance, is a question which, on the basis of my investigations, I am unable to answer. Other carefully conducted experimental investigations are needed before a solution of the problem will be found.[11]

He also refers to reports of the occurrence of conjunctivitis in horses and dogs that have been improperly nourished, and raises the question as to whether these maladies likewise have "the same endogenous origin."

In a paper published in 1915 by McCollum and Davis[12] it was also pointed out that rats which had attained a state of enfeeblement and emaciation on a fat-free diet frequently developed "inflamed eyes" which soon became normal again when the diet was made more suitable. McCollum and his associates subsequently made further reference to inflamed and edematous conditions of the eyes in connection with dietary inadequacies,[13] and later applied the term xerophthalmia to the eye disorder which they too regard as having its origin "in the lack of a sufficient amount of the fat-soluble A".[14]

Since our earliest reference to the subject, the phenomenon and its apparent relation to the lack of fat-soluble vitamin in the diet has been observed by a sufficient number of investigators in various places to render it more than a chance coincidence,[15] although the precise connection between the eye disease and the dietary factor involved was not always appreciated formerly. Something comparable has also been reported for other species: in the rabbit,[16] in mice,[17] and in man.[18]

In discussing the etiology of this type of ophthalmia, Freise, Goldschmidt and Frank[15] early emphasized that it cannot be called forth by mere underfeeding with a food of satisfactory qualitative make-up. In other words, the cause of ophthalmia is not to be sought primarily in inanition; nor do they regard infection as the sole factor in its etiology. Normally nourished animals kept in contact with those exhibiting ulcerations of the cornea failed to develop the malady.

In the British report on accessory food factors,[19] it is assumed, in harmony with our own views, that:

The lessened resistance produced by diets devoid of fat-soluble vitamin first becomes apparent in many cases of rats "by the appearance of a characteristic infection of the external eye, which has been provisionally classified as a xerophthalmia. It usually begins with a swelling of the lids of one or both eyes, which is followed by an inflamed and catarrhal condition of the conjunctivae. This rapidly becomes worse and the discharge which is at first hemorrhagic, frequently becomes purulent. If untreated, the cornea may be involved and total blindness result."

Quite recently in a communication from Professor Hopkins' laboratory by Bulley,[20] the conviction is expressed that:

With avoidance of initial infection, experimental animals can be kept almost entirely free from this so-called deficiency disease, whether fat-soluble A be present or absent, and it is dangerous to draw conclusions as to the fat-soluble A content of any diet from the appearance of xerophthalmia.

This conclusion was reached in view of the absence of evidence of eye symptoms in more than 200 rats that were receiving diets in which "fat-soluble A has been either deficient or absent." The implication is that under proper hygienic conditions and with the use of

8. Im Laufe der III. Woche bei beiden getrennt gehaltenen Tieren Conjunctivitis, später Panophthalmie, und anschliessend daran Abszessbildung in der Kiefer- und Halsgegend. Beide frassen bis zum Tode reichlich.

9. Knapp, P.: Ztschr. f. exper. Path. u. Therap. **5**: 147, 1908.

10. Ich habe öfter das Secret auf Agar und Gelatine abgeimpft, es wuchsen stets massenhaft Colonien von Staphylococcus pyogenes albus und einzelne von Staphylococcus pyogenes aureus, also Mikroorganismen, die wir normaler Weise schon im Bindehautsach vorfinden können. Es sei nochmals betont, dass die Thiere ganz separat in geschlossenen Glasflaschen gehalten wurden, so dass also eine gegenseitige Infection ausgeschlossen war.

11. Es nicht nur die prämortale Resistenzlosigkeit war, welche die Thiere zu derartigen Katarrhen prädisponirte, sondern, wir eine weitere Ursache in der Art der Nahrung suchen müssen, vielleicht in dem Fehlen eines ganz bestimmten wichtigen Körpers. Ob dies der Fall ist, und welches eventuell dieser Körper sein könnte, das ist freilich eine Frage, die nach meinen Versuchen noch nicht entschieden werden kann, und zu deren Lösung es noch sehr zahlreicher und mühevoller Experimente bedürfen wird.

12. McCollum, E. V., and Davis, M.: J. Biol. Chem. **21**: 180, 1915.

13. McCollum, E. V.; Simmonds, N., and Pitz, W.: Am. J. Physiol. **41**: 333, 361 (Sept.) 1916. McCollum, E. V.; J. A. M. A. **68**: 1379 (May 12) 1917.

14. McCollum, E. V.; Simmonds, N., and Parsons, H. T.: J. Biol. Chem. **33**: 411 (March) 1918.

15. Goldschmidt (Footnote 1). Freise, E.; Goldschmidt, M., and Frank, A.: Monatschr. f. Kinderh. **13**: 424, 1915. Halliburton, W. D., and Drummond, J. C.: J. Physiol. **51**: 235 (Sept.) 1917. Drummond, J. C.: Biochem. J. **13**: 81, 95, 1919. Steenbock, H.; Boutwell, P. W., and Kent, H. E.: J. Biol. Chem. **35**: 517 (Sept.) 1918. Steenbock, H., and Gross, E. G.: J. Biol. Chem. **40**: 501 (Dec.) 1919. Steenbock, H., and Boutwell, P. W.: J. Biol. Chem. **41**: 163 (Feb.) 1920; **42**: 131 (May) 1920. Steenbock, H.: Science **1**: 352, 1919.

16. Nelson, V. E., and Lamb, A. R.: Am. J. Physiol. **51**: 530 (April) 1920; Science **52**: 566, 1920.

17. Auer, A.: Biochem. Ztschr. **93**: 1, 1919.

18. Bloch, C. E.: Ugesk. f. Læger **79**: 309 (March 1) 1917. Mori, M.: Jahrb. f. Kinderh. **59**: 175, 1904. The precise significance of this has been questioned by Hess, A. F., and Unger, L. J.: J. A. M. A. **74**: 217 (Jan. 24) 1920. Chick, H.: Brit. M. J., July 31, 1920.

19. Report on the Present State of Knowledge Concerning Accessory Food Factors (Vitamines), Med. Research Comm., Nat. Health Insurance, Special Report Series, No. 38, London, 1919.

20. Bulley, E. C.: Biochem. J. **13**: 103, 1919.

boric acid lotions in any cases of "slightly sore looking eyes," the eye symptoms can be completely avoided. This conclusion is contrary in several respects to our own extensive experience, and is further contradicted by the subsequent observations of Stephenson and Clark [21] from the same laboratory, who ascribed the nonappearance of the eye disease in Bulley's experiments to the fact that the diets had not been purified sufficiently to produce the extent of deficiency in the fat-soluble vitamin that is necessary to elicit the symptoms. Among forty-six of their rats on a diet deficient in the fat-soluble factor, 28 per cent. contracted eye disease and were cured of it in every case by the administration of a product containing fat-soluble vitamin. These English investigators emphasize the finding that although the absence of the fat-soluble factor in the diet of young rats almost invariably causes death preceded by cessation of growth, the ophthalmia is not seen in every case.

TABLE 1.—INCIDENCE OF EYE DISEASE IN RATS 5000-5999

	Total Number	Number with Eye Symptoms
On diets deficient in fat-soluble vitamin	136	69
On diets deficient in water-soluble vitamin (B)	225	0
On diets otherwise deficient	90	0
On diets experimental but presumably adequate	201	0
On mixed food (stock animals)	348	0
	1,000	69

Emmett [22] has reported the appearance of xerophthalmia in 120 out of 122 rats kept on a diet from which the fat-soluble vitamin was missing, whereas no symptoms were observed in several hundred rats that were either deprived of water-soluble vitamin (B) or were on an adequate ration, although the latter animals were fed and handled under circumstances that would permit a uniform possibility of infection. This investigator corroborates our earlier experience that solutions of boric acid or silver-protein fail to relieve the condition, although it is promptly cured after the administration of sources of fat-soluble vitamin.[23]

In order to learn something of the incidence of the eye disease in our rat colony, to which no animals have been admitted from extraneous sources for several years, we have reviewed the statistics seriatim from the records of 1,000 animals representing essentially the entire group under study during one year. It should be noted that all of these animals were kept in the same laboratory. The cages in which they were maintained were sterilized twice a week,[24] but the rats were regularly weighed in a common container, and the proximity of the open mesh wire cages to one another offered sufficient opportunity for the equal dissemination of contagion. The animals were not grouped according to any system of feeding, but were arranged in the cages in the order of their serial numbers, independent of the type of experiment for which they were being employed.

Our records for a thousand unselected rats show the incidence of the eye disease given in Table 1.

From this summary it will be seen that although nearly one half of the thousand rats were on diets undoubtedly deficient, not a single case of the eye disease was observed in animals other than those experiencing a deficiency in fat-soluble vitamin in the ration. The incidence of the disease among this group is 50 per cent., somewhat higher than that observed by Stephenson and Clark, and lower than that reported by Emmett. It should be added that in observations on several thousands of rats we have never observed distinct symptoms of comparable eye disease in any animals except those which had experienced a deficiency of fat-soluble vitamin in their diet.

The eye disease is not the only consequence of the deficiency of a diet in vitamin A. Prolonged growth is impossible in young rats when this factor is missing; indeed, the question as to whether any growth whatever can occur in the complete absence of vitamin A from the diet is at present being debated.[25] Drummond has lately pointed out the importance of working with sufficiently purified diets in order promptly to bring the effects of the lack of fat-soluble vitamin on growth into evidence. In view of the possibilities of retention of small quantities of the vitamin in question in diets not sufficiently purified, it may be assumed that our statistics for the unfavorable effects from them represent a low rather than a high incidence of the disease.

Our experience has shown that the eye disease may frequently make its appearance before any noteworthy decline in body weight, i. e., complete cessation of growth, occurs.[26] For example, in the sixty-nine cases from Rats 5000 to 5999 the eye symptoms were first noted as in Table 2.

TABLE 2.—WHEN EYE SYMPTOMS WERE FIRST NOTED

	Number of Rats
At approximately maximum body weight (before nutritive decline ensued)	33
After decline of 10 to 20 gm. from maximum	15
After decline of 20 to 30 gm. from maximum	13
After decline of more than 30 gm. from maximum	8

We have already mentioned the failure to cure the ophthalmia by the usual procedures of local antisepsis; on the other hand, the administration of vitamin A in any of a considerable variety of foods has almost invariably produced disappearance of the *eye disorder*, even though the animal subsequently died. In a few instances, adequate relief has not followed the use of the vitamin. Whether or not in these cases it was applied too late to permit a restoration of the involved structures we are unable to state. In a number of cases the daily administration of only 100 mg. of butter-fat caused the disappearance of the symptoms within a week. In other instances, 42 mg. of "grass oil" per

21. Stephenson, M., and Clark, A. B.: Biochem. J. **14**: 502, 1920.
22. Emmett, A. D.: Science **52**: 157, 1920.
23. Funk, Casimir, and Macallum, A. B. (J. Biol. Chem. **27**: 51 [Oct.] 1916) have reported that "rats on artificial diets frequently contract an eye infection which can be treated with a certain degree of success by an application of a few drops of zinc sulphate solution. If untreated, this condition is accompanied by loss in weight, becomes acute, and terminates fatally. . . . Rats on yeast and butter diets often show the eye affection regarded by most of the investigators as characteristic of dietary deficiencies." Again, in a study of the growth of rats, Macallum (Tr. Royal Canadian Institute, 1919, p. 175) says: "The use of the moist brewers' yeast, in place of the dried article, immediately relieved the eye troubles. . . . In the case of the two animals whose diet contained butter fat there was a slight improvement in the appearance and behavior of the animals in their capacity to resist the eye infection. Slight attacks of the latter trouble made their appearance, but were easily controlled by the application of dilute zinc sulphate solutions." Quite recently, Funk, Casimir, and Dubin, H. E. (Science **52**: 448, 1920) have stated that "out of thirty rats, only one developed keratomalacia, and this rat was getting 5 per cent. cod liver oil. The eye condition cleared up on giving autolyzed yeast (about 2 c.c. per day)." These reports are at variance with our own experiences with eye disease in rats.
24. The methods used in the conduct of our experiments are described by Ferry, E. L.: J. Lab. & Clin. Med. **5**: 735 (Aug.) 1920.
25. Osborne, T. B., and Mendel, L. B.: J. Biol. Chem., to be published. Drummond, J. C., and Coward, K. H.: Biochem. J. **14**: 661, 1920.
26. Sephenson and Clark [21] suggest that "the occurrence of the disease is not coincident with the cessation of growth, but begins at a later stage" (p. 506); and again: "This disease is further differentiated from the cessation of growth-death symptoms by occurring at a later stage in the experimental period and rising more rapidly to a maximum" (p. 520).

day relieved the symptoms within ten days, 70 mg. of alfalfa oil within seven days, and 66 mg. of spinach oil within twenty-one days. In general, obvious signs of the disorder disappeared within two weeks.

Drummond and Coward [25] have lately pointed out anew that the requirements of the growing rat for vitamin A become less as the animal approaches maturity —a statement in accord with numerous observations of our own. In harmony with this is the further fact that the ophthalmia is a rare phenomenon in more mature animals, even when they are kept on diets poor in vitamin A. Freise, Goldschmidt and Frank [15] could not demonstrate it in rats weighing more than 120 gm. when the experiments were started. We have, however, seen occasional instances even in large animals.

The pathology of the eye manifestations is the subject of a separate report by our colleague Dr. Wason, which follows.

OPHTHALMIA ASSOCIATED WITH A DIETARY DEFICIENCY IN FAT SOLUBLE VITAMIN (A)

A STUDY OF THE PATHOLOGY *

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Though ocular lesions in association with dietary deficiency in fat-soluble vitamin have been recognized for a number of years, few descriptions of the condition have dealt with anything but its gross pathology. The occurrence of these changes has been discussed by Osborne and Mendel, and at their suggestion a detailed histologic examination has been attempted. The albino rats on which this investigation is based were bred and dieted in their laboratory, and belonged to the groups described in the preceding communication. I am indebted to Drs. Osborne and Mendel not only for supplying the animals and the feeding charts, but also for bringing to my attention pertinent articles in the recent literature. After a brief review of such histologic and bacteriologic data as have appeared in these publications, I shall report the results of our anatomic studies before discussing the etiology of the condition.

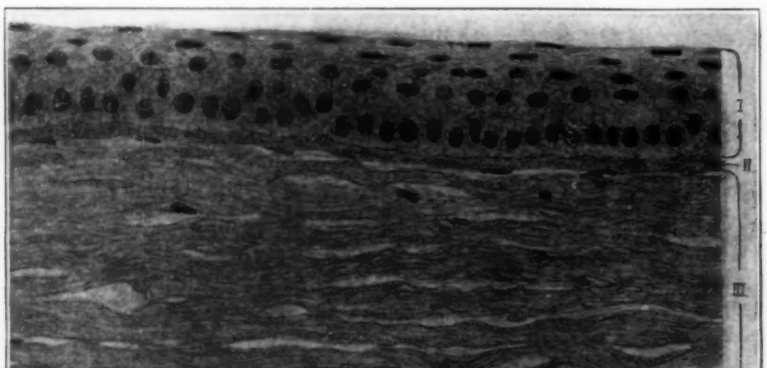

Fig. 1.—Normal cornea: I, epithelium; II, Bowman's membrane; III, substantia propria; IV, Descemet's membrane; V, posterior endothelium.

Ophthalmia developing in animals deprived of fat-soluble vitamin (A) has attracted much attention in the recent literature. The occurrence of this condition, as cited by numerous observers, has been reviewed so thoroughly in the preceding paper by Osborne and Mendel that it is unnecessary here to do more than refer to it. Although the nature and etiology of these ocular manifestations have incited considerable speculation, there are remarkably few and meager reports of its histologic and bacteriologic features.

The most complete descriptions are those of Stephenson and Clark,[1] who found the invasion of leukocytes into the cornea to be the earliest change. Later edema and swelling become manifest, and these are followed by the appearance of blood vessels and an increase in the number of corneal corpuscles. In the more advanced stages the cornea may be completely degenerated and the lens protruding. Eyes that have been cured after the addition of fat-soluble vitamin (A) to the diet may be completely restored to normal, or flattened corneas with the presence of blood vessels may testify to the earlier diseased condition. The bacteria cultivated from the pus of the conjunctival sacs in these animals were varied, and included pneumococci, staphylococci, coccobacilli and diphtheroids. Stephenson and Clark concluded that "the condition directly attributable to dietetic deficiency is a predisposition to bacterial infection of the cornea leading to purulent symptoms and the destruction of tissue," but they "failed to demonstrate with certainty any histologic change in the cornea preceding bacterial invasion."

Freise, Goldschmidt and Frank [2] have noted an early cornification of the epithelium; the middle epithelial cells were swollen and stained faintly, and the lower layer was infiltrated by inflammatory cells. The stroma showed edema, the formation of new blood vessels reaching inward from the limbus, and local areas of cell infiltration. Severe cases presented the picture of a perforating ulcer. Bulley [3] has mentioned the extreme condition in which there was extrusion of the lens.

The character of the ocular disease is in many instances mild. A variable but large percentage of animals show no changes in the cornea that can be recognized by a careful gross examination. When definite corneal opacities are present, the course of the disease varies from a slight lesion, which progresses very slowly over a period of weeks or months, to a rapidly fulminating panophthalmitis in which the lens may be extruded. Healing of the condition after change of diet has been noted by numerous observers. The possibility that such healing might follow the application of boric acid, silver protein and zinc sulphate has been discussed in the previous paper by Osborne and Mendel.

In the small series of animals which have constituted the subject of this report, as will be seen in the accom-

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* The terms xerophthalmia and keratomalacia have been applied indiscriminately to lesions of the eye accompanying dietary deficiencies. As both of these terms refer to definite corneal changes whose existence in this condition is as yet unproved, I prefer to use the more general term of ophthalmia.

1. Stephenson, M., and Clark, A. B.: Biochem. J. **14**: 502, 1920.
2. Freise, E.; Goldschmidt, M., and Frank, A.: Monatschr. f. Kinderh. **13**: 424, 1915.
3. Bulley, E. C.: Biochem. J. **13**: 103, 1919.

panying table, it has been impossible to demonstrate any relation between the severity of the lesion produced and either the duration of the condition or the age of the animals at the time the experiment was begun. The

Fig. 2.—Rat eye (5586): mild reaction, showing hyalinization of the outer layer of epithelium, infiltration of cells in the lower layer, injury of Bowman's membrane, and invasion of blood vessels and cells in the stroma.

eleven rats whose eyes have been studied include one normal animal, one fed on a diet lacking water soluble vitamin (B), and nine fed on a diet lacking fat soluble vitamin (A). The eyes of the former two show no gross or histologic changes, while the ocular lesions of the latter group vary from a very mild change to a panophthalmitis. In two of these nine rats one eye was apparently normal and was not removed, while in seven both eyes were sectioned. A total of sixteen eyes was examined. The severity of the involvement is so variable in the two eyes of a number of the rats that it was impossible to divide the group in any other way than on a simple anatomic basis. For purposes of description the condition may be called mild in four eyes, moderate in five, advanced in six, and healed in one.

GROSS AND MICROSCOPIC EXAMINATION

The eyes show, on gross examination, congestion of the conjunctiva with a serous or seropurulent exudate in the conjunctival sacs. The eyelids are swollen and reddened and frequently have lost their hairs. Corneal opacities of less or greater extent are seen in all but a few cases. A few animals show these changes only in one eye; others exhibit lesions marked in one eye and slight in the second, and in still others, both eyes are extensively involved.

The eyeballs with the eyelids were removed in toto and fixed either in formaldehyd or in Zenker's fluid. A number of sections were made through each one and stained with hematoxylin and eosin and by Gram's stain.

Four eyes show a mild change, characterized by edema, congestion, and a slight cellular infiltration of the cornea, conjunctiva and lids (Fig. 2). The outer layer of corneal epithelium is slightly keratinized, and its wavy, deep pink strands are partly detached from the underlying cells. The inner layer of epithelial cells has lost its mosaic, pattern-like regularity here and there where a few leukocytic or mononuclear cells have infiltrated. In such areas an occasional break in Bowman's membrane is found and the epithelial cells apparently project into the substantia propria. The fibers of this stroma are spread apart by edema, definite capillaries are occasionally observed, and cellular infiltration is present. In the very earliest stages all of these changes may not be found. A slightly cornified epithelium, with a local or diffuse edema of the stroma and rare mononuclear and pus cells in the deeper epithelium and substantia propria, may be the only visible changes. Descemet's membrane and the posterior endothelium are always intact. The eyelids exhibit alterations similar to those of the cornea —edema and cellular infiltration in the inner layer of epithelium, in the subjacent connective tissue, and around the hair follicles.

One section is especially interesting because it shows a traumatic origin for the inflammatory injury. A vegetable fiber has penetrated the epithelium and is impacted against Bowman's elastic membrane. A few leukocytes have appeared in the tissues just beneath, and by Gram stains bacteria are demonstrable.

Five examples are found of a moderate change which is still confined to the cornea and lids. In all of these the cornea is thickened, either locally or diffusely, but chiefly in the connective tissue known as the substantia propria. The outer layer of epithelium is keratinized and appears as eosin staining, wavy strands loosely attached to the viable tissue beneath. Two of the eyes show definite necroses of the

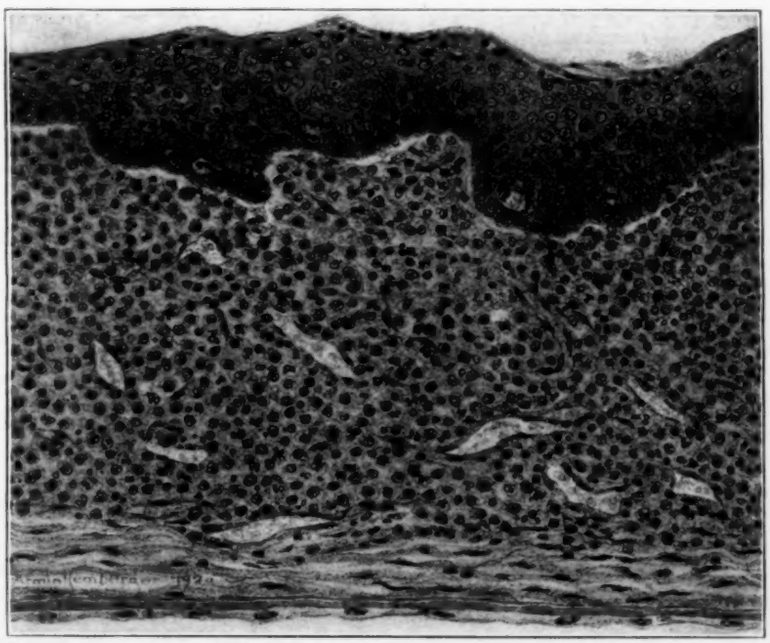

Fig. 3.—Rat eye (5565): Moderate changes: proliferation of epithelium with the presence of many mitoses, absence of Bowman's membrane, and invasion of blood vessels and cells in the stroma; an occasional fibroblast is also seen.

epithelium and of Bowman's membrane, with infiltrations of pus and mononuclear cells into the connective tissue. Where such necroses are not present there may be seen areas in which the regularity of the inner epithelial layer is broken, Bowman's elastic lamella has disappeared, and pus and mononu-

clear cells have invaded deeply into the underlying tissues. Numerous capillaries and occasional fibroblasts are organizing the intermediate layers of cornea, and many of the deeper cylindric epithelial cells are in the process of division. The change in no place reaches the deeper layers of the stroma or appears to injure Descemet's membrane and the posterior endothelium.

In the lids, similar changes are found. The keratinized outer epithelial layer is usually present. Cellular infiltration is especially marked in the inner epithelium and extends into the connective tissue beneath; miliary abscesses are not infrequently found in the hair follicles. Slight proliferation of the epithelium may occur with the presence of occasional mitoses.

Especial interest is attached to the eyes of Rat 5565, which became sore on the one hundred and eighth day of the experiment and continued to be sore in spite of the fact that fat soluble vitamin (A) in the form of butter fat was given a few days latter. One of these eyes shows an extensive necrosis of the surface epithelium and the formation of a broad ulcer to whose ragged edge bacterial masses are attached. The granulations beneath are rich in capillaries and young fibroblasts. The entire field is covered by an infiltration of cells, among which mononuclears with large vesicular nuclei are but slightly more numerous than the pus cells. The epithelium at the borders of the ulcer exhibits marked proliferations, dipping down half the width of the cornea; mitoses are numerous, especially in the deeper cylindric layer of cells. Bowman's membrane appears only at some distance from the edges of the proliferating epithelium. Descemet's membrane, the posterior endothelium, and the anterior chamber are not involved.

The cornea of the other eye is thickened to double its normal width for about half of its length (Fig. 3). Epithelium is present over the entire surface, but is keratinized superficially, and numerous epithelial buds extend downward almost half the depth of the thickened stroma. The demarcation between epithelium and connective tissue is very sharp, although Bowman's membrane cannot be seen. Numerous mitoses of the lower epithelial cells are found here also. The granulation tissue is similar to that described previously, and there is no involvement of the two inner layers of the cornea.

In six of the eyes, still more advanced changes are found. The anterior chamber has been invaded by the inflammatory exudate, and in three of the six, the posterior chamber is also affected. The corneal changes are similar to those in the previous group. Keratinization of the epithelium occurs, but no ulcers are found. The epithelium is thickened, Bowman's membrane partly destroyed, and the line separating epithelium and substantia propria is blurred by the proliferating epithelial cells and the inflammatory exudate. The proliferation is in no case so striking as in two examples of the former group (Rat 5565), but the growth of fibroblasts and capillaries is even more marked, and the reaction extends inward to Descemet's membrane. In a few of the sections, definite breaks in this elastic layer are found and the endothelium beneath is partly destroyed. In four instances the chambers are filled with an exudate consisting of serum, erythrocytes, fibrin, pus and mononuclear cells (Fig. 4). The iris is involved by the inflammatory process. In a fifth eye the iris has become attached to the cornea and is indistinguishable from it except near the corners, where serum still fills the remaining spaces of the anterior chamber. The cornea itself is infiltrated with an acute inflammatory exudate, but shows also a rather marked growth of fibroblasts and blood vessels, and an almost complete obliteration of the line separating epithelial and connective tissue cells. The most advanced stage is found in the last of the six eyes, in which there has evidently been a panophthalmitis with rupture of the cornea (Fig. 5), and the point of rupture is still patent. The anterior chamber is filled by a young granulation tissue which attaches the cornea to the iris and lens. In the posterior chamber the retina is also adherent to the lens. The lids in this group are very similar to those previously described. In no instance is there any involvement of structures surrounding the eyeball.

The eye of Rat 5580 is also of interest, as the ophthalmia noted on the fifty-sixth day of the experiment lasted for eleven days and promptly healed up after the feeding of butter fat. The rat was examined postmortem 100 days after recovery. The cornea was entirely normal except for the presence of a number of small blood vessels in the connective tissue.

FINDINGS IN EXPERIMENTS

Rat	Diet	Age of Rat, Days	Age When Experiment Began, Days	Length of Feeding Experiment, Days	Duration of Ophthalmia Noted, Days	Weight of Rat at Death, Gm.	Other Findings at Necropsy	Eye	Fixation	Stage of Involvement	Microscopic Notes
5480	Normal	126	..	...	..	164	.....	Z		Normal	
5477	Lack of water soluble vitamin	127	52	75	..	69.3	.....	Z		Normal	
5536	Lack of fat soluble vitamin	112	36	76	7	139.9	.....	Z		Moderate	
								F		Moderate	
5565	Lack of fat soluble vitamin till ophthalmia; then given butter fat on 113th day	233	49	184	76	145.8	.....	Z		Moderate	Marked epithelial proliferation
								F		Moderate	Ulceration and proliferation
5576	Lack of fat soluble vitamin	133	51	82	1	88.1	.....	Z		Advanced	Hemorrhage in anterior chamber
								F		Mild	
5580	Lack of fat soluble vitamin till ophthalmia; then given butter fat on 56th day	209	41	168	11	187.1	Fibrosis of testes, bronchitis, peribronchitis, pneumonia	Z		Healed	
5586	Lack of fat soluble vitamin	121	42	79	11	126.7	Fibrosis of testes	Z		Mild	
								F		Moderate	Slight ulceration of epithelium
5591	Lack of fat soluble vitamin	116	29	87	7	74.6	Pyelitis	Z		Mild	Injury by vegetable fiber
6053	Lack of fat soluble vitamin	139	34	105	21	114.2	.....	Z		Advanced	Partial organization of anterior chamber; exudate in posterior chamber
								F		Mild	
6250	Lack of fat soluble vitamin	85	31	54	4	65.6	.....	Z		Advanced	Acute exudate in both chambers
								F		Advanced	Ruptured cornea; organization of both chambers
61000	Lack of fat soluble vitamin	100	42	58	7	112.7	.....	Z		Advanced	Serous exudate in anterior chamber
								F		Advanced	Seropurulent exudate in both chambers

BACTERIOLOGIC STUDIES

Cultures and direct smears were made from the conjunctival and corneal exudates in a number of cases, and staphylococci, streptococci, pneumococci and diphtheroids were obtained. The same organisms have been found by other investigators (Stephenson and Clark). Cultures were not made from the corneal tissue itself, as would have been the method had the bacteriologic examination been considered of primary importance. The procedures necessary for such examination would obviously render the eyes unfit for careful histologic study.

Gram stains were made on the sections from all eyes. Numerous bacterial masses are found on the corneal surfaces and in the conjunctival sacs. Where definite breaks or necroses of the cornea are demonstrable, organisms are fre-

quently seen in the underlying tissues. Occasional bacteria are scattered through the inflamed cornea and conjunctivae, but one of the striking features of the study is the infrequency with which such organisms are found. They are seen in slightly greater numbers in the acute exudate of the anterior chambers either lying free or within the bodies of phagocytic cells, and are almost invariably of the coccoid or diplococcoid varieties.

Fig. 4.—Rat eye (6250): Advanced changes: acute exudation of serum and pus cells in both the anterior and posterior chambers.

FINDINGS IN OTHER ORGANS

The general pathologic examination of the greater number of the rats is negative except for marked emaciation. The loss of weight affects chiefly the liver and musculocutaneous systems. Marked lymphoid hyperplasia with many mitoses is present in the spleen and lymph glands of both normal controls and animals fed on diets lacking fat soluble vitamin (A) and water soluble vitamin (B). Rat 5580, whose ophthalmia had been healed after the administration of butter fat, shows a purulent bronchitis, peribronchitis and beginning pneumonia. Rat 5591, whose eye shows only an early traumatic injury, exhibits a purulent pyelitis in both kidneys. Fibrosis of the testes is noted in two cases, and apparent diminutions of function in several animals.

COMMENT

No fundamental data concerning the etiology of ophthalmia in rats on deficient diets or the cause of the corneal localization have been derived from these anatomic studies. Statistical evidence offered by many observers leads to the belief that the condition cannot primarily be due to bacteria, nor can it be definitely associated with the degree of cachexia, since an equal loss of weight is found in animals on other defective diets. Rats kept under the same hygienic conditions and on the same deficient diet exhibit corneal changes, if at all, at varying intervals of time and in widely different degrees. Not infrequently a considerable period elapses between the inception of the disease in the two eyes of an animal, and the resultant pictures are also variable. Obviously local conditions play an important part in the production of the change. But as no anatomic manifestation of any preinflammatory lesion is found by our ordinary histologic methods of examination, its nature can only be hypothesized. The well known specificity of chloroform for the liver cells, of mercury for the epithelium lining the convoluted tubules of the kidney, and of tetanus toxin for the central nervous system may serve as possible analogues for a definite relation between the absence of a fat soluble vitamin (A) and corneal lesions. The possibility that a traumatic injury may offer the entering wedge for bacteria in at least a number of cases (as in Rat 5591) must be considered.

It has never been demonstrated that bacteria constitute the primary etiologic factor in the production of this form of ophthalmia. The work of Emmett,[4] who passed sterile threads over diseased eyes and then over the eyes of normal controls and of rats on diets lacking water soluble vitamin (B) without producing any infection, tends to disprove such an etiology. The importance of secondary bacterial invasion, however, cannot be ignored, since bacteria are found almost constantly in these inflamed eyes. Variations in the course of the disease may conceivably depend on the type and virulence of the infecting organism, and it is safe to assume that a rapidly developing panophthalmitis can only be the result of bacterial infection.

Healing of the lesion usually follows a change in diet. In the milder reactions it is probable that complete restoration to a normal architecture, with or without the continued presence of blood vessels, may result. When there has been loss of corneal substance with a subsequent proliferation of connective tissue, and especially when such fixed tissue reaction has involved the anterior chamber and bound iris and

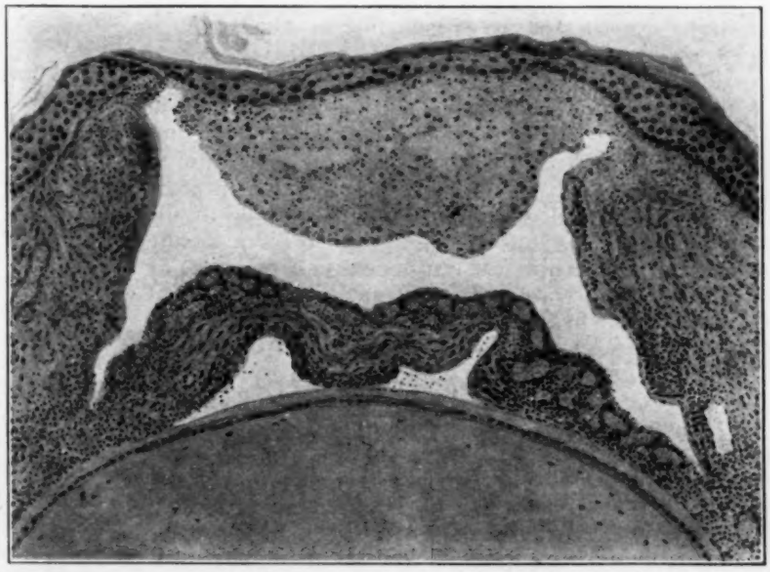

Fig. 5.—Rat eye (6250): Advanced changes: The point of rupture through the cornea is still patent; the anterior chamber has been obliterated by a young granulation tissue.

4. Emmett, A. D.: Science **52**: 157, 1920.

lens to the cornea, a permanent scar must necessarily remain.

CONCLUSIONS

1. The primary etiologic factor in the ophthalmia of rats on deficient diets is the lack of fat soluble vitamin (A).

2. The nature and mechanism of the change in these rats whereby their corneas are rendered susceptible to bacterial invasion is unknown.

3. The type and virulence of the organisms of secondary infection determine, in part at least, the course of the disease.

4. The anatomic manifestations of the disease are characterized by hyalinization or necrosis of the outer layer of corneal epithelium, exudation of serum and cells into epithelium and stroma, and a proliferation of blood vessels and fibroblasts. In advanced cases invasion of the anterior, and occasionally of the posterior chamber, results.

5. The degree to which restoration is possible depends on the extent of the secondary injury.

DIAGNOSIS OF PREGNANCY BY THE ROENTGEN RAY

POSSIBILITIES OF THE PROCEDURE DURING THE FIRST HALF OF GESTATION

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This study was undertaken with the object of determining the earliest stage of gestation at which a diagnosis of pregnancy could be made by demonstrating portions of the fetal skeleton by the roentgen ray. While most investigators agree that positive results cannot be expected until pregnancy has advanced to four and a half or five months, there are some who claim to have demonstrated parts of the fetal skeleton in utero as early as the end of the second or beginning of the third month. As the roentgen ray is occasionally resorted to as the court of last appeal in some cases of abdominal tumor presenting difficulties in differential diagnosis from pregnancy, it would seem desirable to establish, more exactly, the earliest stage of pregnancy at which diagnosis by the roentgen ray can be made.

Some idea of the possibilities of an early diagnosis may be gained from a consideration of the stage of pregnancy at which the various centers of ossification make their appearance. Hess [1] has recently roentgenographed fifty-five specimens of fetus whose ages have been determined from the data furnished by the history of menstruation and pregnancy and also from measurements, and has found a marked constancy in the time and sequence of appearance of the various centers. The first center of ossification develops in the clavicles in the sixth to the seventh week of gestation, and can be demonstrated by the roentgen ray in the seventh week. This is soon followed by a center appearing in each half of the mandible. In the eighth week numerous centers become visible, among them the squamous portion of the occipital bone and superior maxilla in the head, the scapula, the humerus, the femur and some of the ribs. In the ninth week appear centers in the hand and foot, other bones of the head, the axial skeleton and the pelvis; successive weeks on to full term mark the extension of some centers and the appearance of other centers, the sequence of their development being perhaps more constant in the first than in the second half of pregnancy. His results agree closely with those of Keibel, Mall, Rauber and Kopsch, whom he quotes, and he emphasizes the statement of Mall that "the remarkable regularity of the appearance of the bones makes of them the best index of the size and of the age of the embryo that we now possess."

There are certain physical obstacles in the way of obtaining equally early results with the living fetus in utero. One of the greatest obstacles is the thickness of the material tissues and the relatively slight density of the fetal bones early in pregnancy; also the amount of blood contained in the uterine walls, which has been estimated to absorb 60 per cent. of the rays. In addition, the amniotic fluid, the respiratory movements of the mother, the movements of the fetus and the unequal distances of the different parts of the maternal pelvis and of the fetus from the plate make the demonstration of the fetal skeleton in utero more difficult than would be judged from the time of appearance of the centers of ossification.

Some of these difficulties can be overcome to some extent by the technic used. Preliminary purgation, preferably with castor oil, is recommended. The dorsal, prone or lateral position may be used, but in early pregnancy there is advantage in directing the rays in the line of axis of the pelvic canal, either from above downward or from below upward. Ponzio [2] used a 24 by 30 cm. plate with an intensifying screen and 25 ma. through a tube of medium hardness, varying the exposure from one-half to two seconds according to the stage of the pregnancy, the size of the patient and the amount of fluid. Edling [3] made use of moderate compression to minimize movement and blurring on the plate, and used medium soft tubes with 7 to 8 cm. spark and exposure time of two to four seconds during which the patient held her breath. Heynemann [4] used the side position, compressed diaphragm, intensifying screen and enforced apnea during an exposure time of two to ten seconds with a medium soft tube. Von Jaksch [5] used moderately hard rays with metal filter and 40 ma. for from twelve to fifteen seconds' exposure. Fabre [6] used an exposure not to exceed ten seconds. Potocki [7] reduced the exposure time to one-fifth second, using from 40 to 60 ma. O'Donnell [8] used a 4 kilowatt Scheidel-Western interrupterless transformer and soft tube, starting on about 3 ma. of current. For a patient of average weight and four months' pregnant, he recommended 25 ma. for one-fourth second. For each

1. Hess, J. H.: Diagnosis of the Age of the Fetus by the Use of Roentgenograms, Illinois M. J. **33**: 73-78 (Feb.) 1918.

2. Ponzio, M.: La Radio-diagnostica della gravidanza, Radiol. med., Torino, 1914, pp. 56-66.

3. Edling, Lars: Ueber die Anwendung des Roentgenverfahrens bei der Diagnose der Schwangerschafts, Fortschr. a. d. Geb. d. Roentgenstrahlen **17**: 345-355, 1911; München. med. Wchnschr. **58**: 567, 1911.

4. Heynemann, T.: Die diagnostische Verwertung der Roentgenstrahlen in der Geburtshilfe, Ztschr. f. Geburtsh. u. Gynäk. **73**: 92-136, 1913.

5. Von Jaksch, R.: Ueber die Diagnose der Schwangerschaft mittels des Roentgenverfahrens, Zentralbl. f. inn. Med. **32**: 345, 1911.

6. Fabre: De la radiographie obstétricale, Bull. Soc. d'obst. de Paris **14**: 36-39, 1911.

7. Potocki: Note summaire sur la radiographie de la grossesse, Atti d. Cong. ital, di radiol. med., 1913, Pavia **1**: 198-200, 1914.

8. O'Donnell, P. S.: X-Ray Findings in the Differential Diagnosis of Early and Late Pregnancies, J. A. M. A. **58**: 748-750 (March 16) 1912.

succeeding month and 10 pounds more weight, one-sixth second more exposure should be given. He advised four pictures of each subject, the first two of the patient lying on the abdomen, the umbilicus just touching and lying in the center of a 14 by 17 plate, the other two plates being taken laterally, following development of the first plate, in order that advantage might be taken of a knowledge of the position of the fetus. All investigators emphasize the belief that the exposure of the mother and fetus to the roentgen ray is entirely harmless.

MEANS OF ESTIMATING STAGE OF PREGNANCY

Before analyzing some of the cases mentioned by Edling and by Albert-Weil [9] as examples of the demonstration of the fetus in utero by the roentgen-ray as early as the third or fourth month, it is important that careful consideration be given to the means of estimating the stage of pregnancy.

The first requisite in determining the approximate date of conception is an accurate menstrual history. If one knows the interval between the periods, whether regular or not, the duration of the flow, the amount as estimated by the number of changes required on the heaviest day, intermenstrual bleeding, etc., he is then better able to judge whether conception followed soon after the last period or just before the next period, in which case this period is usually scantier, shorter, or both. It is generally agreed that fertilization is more likely to take place directly following the cessation of the period than at any other time of the menstrual cycle. Other checks on the date of conception are the time of onset of nausea and vomiting, which begins five or six weeks after conception; but this is absent in nearly half the cases; also the date of quickening, which is usually the seventeenth or eighteenth week. The height of the fundus can be relied on to give quite accurate information as to the stage of pregnancy, provided such conditions as hydramnios, multiple pregnancy, hydatidiform mole, tumors, and abnormal presentations, such as breech or transverse, do not exist. Finally, the date of delivery and the weight of the baby are important as a further check on the stage of pregnancy at which the roentgenogram was taken.

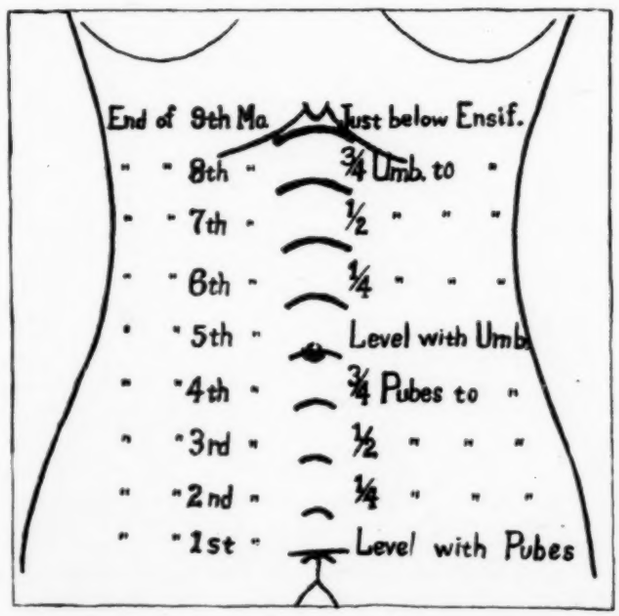

Fig. 1.—Height of the fundus at the various months of pregnancy, according to a "rule of fourths."

For some years past, we have made it a practice to compare the height of the fundus with the stage of gestation as determined by all possible data, and have formulated a rule which we have found to be quite dependable: With the patient in the dorsal position and at the end of the first calendar month of pregnancy, the top of the fundus can be felt on a level with the pubic crest; at the end of the second month, one-fourth the distance from the pubic crest to the umbilicus; at the end of the third month, one-half the distance; at the end of the fourth month, three-fourths the distance; at the end of the fifth month, on a level with the umbilicus; at the end of the sixth month, one-fourth the distance from the umbilicus to the ensiform cartilage; at the end of the seventh month, one-half the distance; at the end of the eighth month, three-fourths the distance; at the end of the ninth month, almost up to the ensiform cartilage. The phenomenon of lightening does not seem to be of sufficiently frequent occurrence or cause sufficient lowering of the fundus to interfere appreciably with the application of this rule. The method is perhaps somewhat more accurate in primigravidas than in multigravidas, but this difference is very slight. There may be found a slight variation from the "rule of fourths" at the end of the third and fourth months, when the top of the fundus may be found slightly more than one-half and three-fourths the distance, respectively, but the difference is not sufficient to change the fraction.

We are aware of the fact that this rule does not agree with the estimates found in the textbooks. For example, De Lee states that for the first three months the uterus is entirely a pelvic organ, which is hardly correct if he means the true pelvis. The same author states that "if the fundus reaches one third the way to the navel, the pregnancy is of four months; if two thirds, five months; at the navel, six months; one third the distance to the ensiform, seven months, etc. Edgar says:

> At the end of the third month the fundus uteri is about on a level with the symphysis. During the fourth month it occupies the hypogastrium; at the fifth it is half way between the symphysis and the umbilicus; by the sixth it is at the umbilicus or just above; by the seventh it is half way between the umbilicus and the ensiform cartilage. It reaches the ensiform by the eighth month, where it remains for about two weeks, then sinks a trifle in the last two weeks of pregnancy.

Farther on he states that in the ninth month the fundus descends almost to the depth at which it was in the seventh month. Williams says

> During the first two months the pregnant uterus still continues to be entirely a pelvic organ, whereas during the third month it begins to rise above the symphysis. Generally speaking, we find that the fundus at the fourth month is several fingerbreadths above the symphysis pubis; at the fifth month, midway between it and the umbilicus; at the sixth month at the level of the umbilicus; at the seventh month three fingerbreadths above the umbilicus; at the eighth month an equal distance above its position at the seventh month; at the ninth month below the xiphoid, whereas in the last month, particularly in primiparous women, it sinks downward and assumes almost the position occupied at the eighth month.

9. Albert-Weil, E.: Roentgenogram Showing Four Months' Fetus in Utero, Paris méd. 7: 314 (April 21) 1917.

Cragin says:

During the first three months the fundus does not usually rise above the pelvic brim. In the fourth month the fundus rises above the symphysis pubis; at five months the fundus lies midway between the symphysis and the umbilicus; at six months, at the level of the umbilicus; at seven months, one third the distance between the umbilicus and the ensiform; at eight months, two thirds the distance and at eight and a half months, approximately at the ensiform. During the last two weeks the fundus descends to about the level of the eighth month.

The method of estimating the stage of pregnancy by the height of the fundus in centimeters above the pubic crest has also been used, but we do not believe it is any more accurate than the "rule of fourths," and certainly not as easily remembered. The application of this rule may be noted in the appended detailed report of cases in which the roentgen ray was employed.

COMMENT ON CASES OF VARIOUS OBSERVERS

Before taking up in detail the cases presented in this series, we will review certain cases of other authors who have claimed to diagnose pregnancy by the roentgen ray as early as the third or fourth month of gestation. Edling,[3] in his conclusions of an article on the use of the roentgen ray in the diagnosis of pregnancy, states that "it is possible to obtain satisfactory roentgenograms of the fetus in utero at the end of the second or at the beginning of the third month of pregnancy," and in support of this statement mentions the following cases:

"Case 1. Last period, November, 1909. Fetal movements, March, 1910. Examination, April 4, 1910, reveals fundus at level of navel. Roentgenogram, April 12, showed head of fetus corresponding in size to about the sixth month of pregnancy."

Comment.—The data given support a positive diagnosis of pregnancy at about the end of the fifth or beginning of the sixth month.

"Case 3. Last period the last of April, 1910. At examination, Aug. 31, 1910, fundus reaches to the level of the navel. Consistency more elastic than usual. Roentgen ray, Sept. 1, 1910, demonstrated shadows of the fetal head, corresponding to the fourth month. Diagnosis: pregnancy and hydramnios."

Comment.—Lack of history of menses, nausea and date of quickening make it uncertain whether conception preceded or followed the last period. The height of the fundus corresponds to the end of the fifth month. No data are given as to the date of labor, weight of the child, etc., and whether hydramnios continued to be a complication of the pregnancy.

"Case 5. Last period, Nov. 3, 1910. Examination, Dec. 7, showed the uterus the size of a fetal head. Roentgen-ray examination, Dec. 8, 1910, reveals no fetal shadows in the uterus. On examination, Jan. 2, 1911, the fundus reaches to within one fingerbreadth of the umbilicus and has a softer consistency than a normally pregnant uterus. Roentgen-ray examination, Jan. 19, 1911, reveals a distinct circular shadow of the fetal head, a long medullated bone and an indication of the vertebral column. The size of the skeleton indicates at most the beginning of the third month of pregnancy."

Comment.—The uterus would not be as large as a fetal head at the end of only four weeks' gestation. Furthermore, if, January 2, the fundus reached to within one fingerbreadth of the navel, on January 19, the date of the roentgen-ray examination, it must have been on a level with the navel, corresponding to the end of the fifth month of pregnancy. Lack of data in regard to menstrual history, onset of nausea, if present, date of quickening, subsequent evidence of hydramnios, date of labor and weight of child, makes his conclusion doubtful.

"Case 6. Last period the beginning of September, 1910. Examination, Dec. 19, 1910, revealed two tumors in the pelvis, one reaching to the level of the umbilicus and the other to the left and firmer, reaching three fingerbreadths above the symphysis. No heart sounds heard. Roentgen-ray examination, December 21, disclosed, in the middle of the pelvis, a distinct shadow of the fetal pelvis and both lower extremities; also the vertebral column, thorax and head. The size of the fetal skeleton indicated the fourth month. Delivered, May 6, 1911. Child carried to full term and healthy."

Comment.—On the basis of the menstrual history, the fundus would not be expected to reach the level of the navel, but would correspond more to the tumor on the left. However, the roentgen-ray examination showed the fetal skeleton to correspond to the tumor in the midline, and hence probably of fully five months' development. The date of labor, May 6, would correspond to a child of eight months' development; hence it is uncertain whether the last flow was possibly in August or whether it was normal or not.

"Case 17. Last period, beginning of December, 1910. No fetal movements. Examination, March 27, 1911, reveals fundus midway between symphysis and navel. No heart sounds. Roentgen-ray examination, March 28, in the third month, reveals the vertebral column and traces of the head. Delivered of a full term child, Aug. 21, 1911.

Comment.—More accurate data as to menstrual history and nausea, if any, would be desirable. However, this case is of more value, as the level of the fundus and the date of labor corresponds quite well to a positive diagnosis by the roentgen ray near the end of the fourth month of pregnancy.

Hence, close analysis of these cases hardly justifies Edling's conclusion that it is possible to obtain a positive roentgenogram of the fetal skeleton in utero at the end of the second or the beginning of the third month of pregnancy. The data mentioned in Case 17 place his earliest positive result at the end of the fourth month of pregnancy. Heynemann,[4] in criticism of these cases, also concluded that the data did not justify Edling's conclusions, and he did not consider that this author had made a positive diagnosis earlier than the end of the fifth month. In writing of his own efforts to demonstrate pregnancy in the early months, he states that his earliest positive result was at the end of the fifth month, but mentions no data in regard to his cases.

Von Jaksch,[5] in a preliminary report, states that by means of metal filters and moderately hard rays, with 40 ma. and exposure time from twelve to fifteen seconds, he succeeded in making the gravid uterus plainly visible from the second month on. His statement apparently refers to demonstration of the outline of the uterus and not of the fetal skeleton, and hence is not conclusive evidence.

Fabre[6] mentions positive diagnoses in the later months of pregnancy but no early cases. Potocki[7] states that below the fifth month the fetus is almost always invisible, but occasionally a faint image may be obtained. Albert-Weil[9] holds that it is possible to make a positive roentgen-ray diagnosis of pregnancy from the beginning of the fourth month, and mentions the case of a girl of 15 whose menses had been absent four months. Her abdomen had increased in size somewhat, but her breasts had developed very little. Auscultation revealed no heart sounds. Bimanual examination did not give any definite information, and ballottement was not obtained. A roentgenogram taken in line with the axis of the pelvis showed the fetal head and a portion of the vertebral column. This case is very suggestive of a positive diagnosis of pregnancy at the end of the fourth month, although the date of the last period, the date of the roentgen-ray examination and the exact height of the fundus would make it possible to form a more positive conclusion.

O'Donnell [8] states that roentgenograms "will now demonstrate the fetus in utero as early as the fourth month;" and again, "the fetus in utero may be detected from the fourth month." No detailed case reports of such early demonstrations are mentioned.

It will thus be seen that the earliest positive result, that of Edling's Case 17, was attained at the end of the fourth month of pregnancy, and that the data mentioned in connection with cases supposed to have been diagnosed earlier than this will not bear close analysis.

INVESTIGATION BY THE AUTHORS

The persons that were utilized as a basis for this investigation were selected from those attending the prenatal clinic of the Gray dispensary. It was endeavored to select the most favorable subjects for roentgen-ray examination, avoiding those patients with heavy, thick abdominal walls, and those with any evident abnormality of pregnancy. Most of the patients were colored. When a suitable case in the third or early in the fourth month of pregnancy was found, roentgenograms were made at intervals from one to several weeks on the same patient, until the fetal skeleton was demonstrated; but in many cases it was difficult to get the patient to return at regular intervals, and it was impossible to trace some of them to obtain a final record as to the date of labor and the weight of the child. The patients were instructed to take a sufficient dose of castor oil to move the bowels thoroughly before coming for roentgen-ray examination.

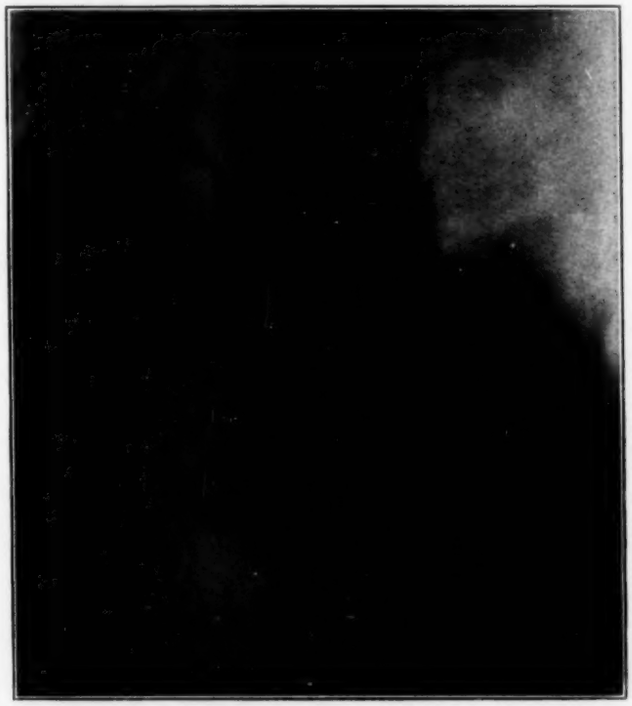

Fig. 2 (Case 7).—Pregnancy at five and one-half months; breech presentation.

In this series of cases, Snook transformer and gas tubes were used exclusively; the exposure elements were varied according to the thickness and weight of the patient, but the average exposure was from four to six seconds with a 5-inch spark gap, using 25 milliamperes and a diaphragm and cone. The greater number of patients were placed in the prone position. In some cases, however, the fetal shadows were shown to better advantage with the patient in the dorsal position, the central ray being, at all times, parallel with the pelvic axis.

CASE 1 (Dispensary Number 35762).—A colored tertipara, aged 32, in whom the menses began at 13, were usually regular every twenty-eight days, with from three to five days' flow, and were rather profuse, had the last flow, Aug. 1, 1919. This was normal, but since the preceding April, the periods had been coming every other month. Nausea began, September 1, and lasted several weeks. She did not remember the date of quickening. The expected date of labor was May 8, 1920. Examination, Dec. 10, 1919, showed the fundus three-fourths the distance from the pubes to the umbilicus. Roentgen-ray examination, December 15, gave no definite diagnosis of pregnancy. The patient did not return for further observation. It was subsequently learned that she had influenza in March, following which she was delivered, March 31, by a midwife of a very small baby that lived only six weeks. Conclusion: Roentgen-ray examination was negative at four and one-fourth months.

CASE 2 (35003).—A colored nullipara, aged 20, in whom the menses began at 15, and were regular every twenty-eight days of three days' flow, three changes at most being required each day; had the last period, July 27 to 29. It was shorter and scantier than usual. Nausea and vomiting began about the middle of August and lasted one week. She had no recollection of the date of quickening. Estimation of the date of labor was uncertain, as there was a possibility of conception's having taken place just preceding the last period. Examination, Dec. 3, 1919, showed the fundus level with the umbilicus. On roentgen-ray examination, Dec. 4, 1919, no definite diagnosis could be made. Examination, March 31, 1920, showed the fundus about three-fourths the distance from the umbilicus to the ensiform cartilage. She was delivered, April 24, of a 7¼-pound boy. Conclusion: Roentgen-ray examination was negative at four and three-fourths months.

CASE 3 (35889).—A white secundipara, aged 22, in whom the menses had always been regular, every thirty days, had been married three years and had two children, the youngest born at full time, March 9, 1919. The flow returned in April, 1919, while she was nursing the child, and continued regular and normal until July 25, 1919, when the last period occurred. She had no nausea and had noticed no fetal movements as yet. Examination, Dec. 29, 1919, revealed the fundus one fingerbreadth below the umbilicus, more than three-fourths the distance from pubes to umbilicus. On roentgen-ray examination, Dec. 30, 1919, no evidence of pregnancy could be seen. The patient passed from observation, but it was subsequently learned that she was delivered of an 8½-pound child, May 2, 1920. Conclusion: Roentgen-ray examination was negative at the end of the fifth month.

CASE 4 (35184).—A colored decipara, aged 32, in whom the menses began at 13, were always regular every twenty-eight days, with seven days' flow, three changes a day at most being required, had the last period the last of August; but it was of only three days' duration and was scantier than usual. Nausea began the last of August. No fetal movements had been felt. Examination, Nov. 26, 1919, showed the fundus three-fourths the distance from the pubes to the umbilicus. From a roentgenogram taken Jan. 22, 1920, a definite diagnosis could not be made. The patient was delivered of a 9¼-pound girl, May 6, 1920. Conclusion: Roentgen-ray examination was negative at five and three-fourths (?) months.

CASE 5 (36129).—A colored nullipara, aged 18, in whom the menses began at 13, and were regular every twenty-eight days, the flow being scanty and of from three to four days' duration, had had two miscarriages, each several months advanced, probably due to syphilis. The Wasserman test was four plus. The last period occurred, Oct. 13, 1919, and was normal; there had been no flow since. There was an indefinite history of nausea, beginning January 1. Examination, January 15, showed the fundus to be one-half way from the pubes to the umbilicus. From a roentgenogram taken Feb. 5, 1920, no posi-

tive diagnosis of pregnancy could be made. The patient miscarried several weeks later. Conclusion: Roentgen-ray examination was negative at three and three-fourths months.

CASE 6 (30203).—A colored primipara, aged 23, in whom the menses began at 10, were regular every twenty-eight days, of three days' flow and of average amount, had been married three years and had one premature stillbirth at the eighth month due to eclampsia. The last normal period occurred, Sept. 15, 1919, and there had been no flow since. Nausea and vomiting began in October and continued until February. Fetal movements were first noticed about January 20. Examination, Feb. 4, 1920, revealed: blood pressure, systolic 230, diastolic, 120; fundus one fingerbreadth below the umbilicus. From roentgen-ray examination, February 5, a positive diagnosis of pregnancy could not be made. March 2, the outline of the head and other slight bony structures could be seen. The patient was delivered by a midwife, May 17, of a still-born baby. Conclusion: Roentgen-ray examination was negative at five and one-fourth months, and positive at five and one-half months.

CASE 8 (33932).—A colored nullipara, aged 19, in whom the menses began at 12, and were regular every thirty days, of two to three days' flow, and two changes, at most, being required a day, had the last period about March 20, 1919; the exact date was uncertain. The flow was not so free as usual. There was no definite history of nausea or vomiting. The probable date of labor was estimated to be December 27. Examination, August 6, disclosed the fundus one fingerbreadth above the umbilicus. Roentgen-ray examination, August 7, revealed pregnancy, parts of the bony structure being apparent. The patient was delivered of a 10-pound girl, Jan. 14, 1920. Conclusion: Roentgen-ray examination was positive at five and one-fourth months.

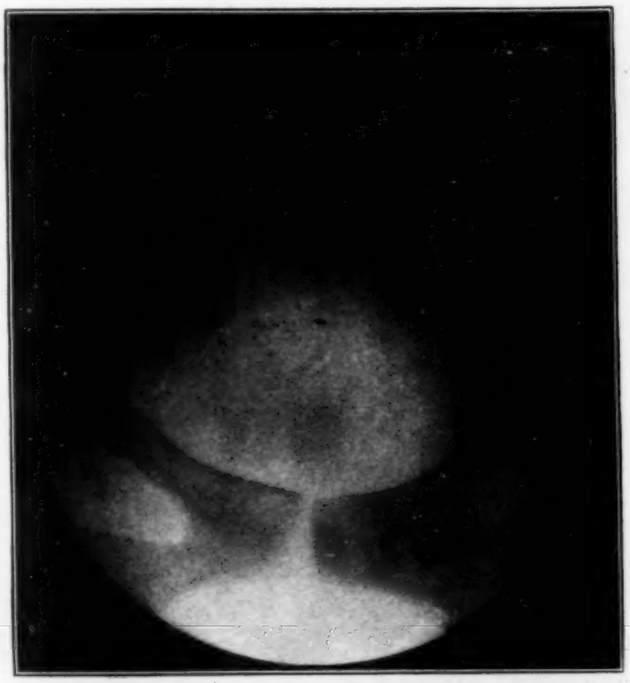

Fig. 3 (Case 9).—Outline of head and some long bones in pregnancy at four and one-fourth months. In order to secure greater contrast in Figures 2 and 3, the borders of the bony shadows were penciled.

CASE 9 (33215).—A colored nullipara, aged 18, in whom the menses began at 13, and were regular every twenty-eight days, of four days' flow, and rather heavy, had the last period March 27 to 30, 1919. It was normal, and there had been no show of blood since. She had nausea and vomiting during the last week in May. The probable date of confinement was estimated to be Jan. 3, 1920. Examination, June 18, 1919, revealed the fundus two fingerbreadths above the pubic crest. On roentgen-ray examination, June 18, a positive diagnosis of pregnancy could not be made. Examination, August 6, revealed the fundus one fingerbreadth below the umbilicus. The patient said she felt the first movements, August 4. Roentgen-ray examination, August 7, disclosed parts of the bony structures. The patient was said to have been delivered in December of a full term child. The exact date of delivery and the weight of the child could not be determined. Conclusion: Roentgen-ray examination was negative at two and one-half months, and positive at four and one-fourth months.

CASE 10 (23193).—A colored secundipara, aged 20, in whom the menses began at 14 and were regular, every thirty days, with four days' flow, had an abortion at the third month in February, 1919. She flowed again in March, April and May, but in June the flow lasted only three days, from the 15th to the 18th, and was scantier than normal. No flow had occurred since. Nausea and vomiting began about July 15 and lasted two months. The first movements were felt, October 15. The probable date of confinement was estimated to be March 10, 1920. Examination, Sept. 17, 1919, revealed the level of the fundus more than three-fourths the distance from the pubes to the umbilicus. Roentgen-ray examination, September 18, disclosed a shadow that appeared to be the enlarged uterus, but no bony structures could be seen. Another roentgenogram was taken, October 2, but was destroyed by a warm solution before being examined, and the patient failed to return for further examinations. She was delivered, Feb. 20, 1920, of twins weighing 6 pounds each. Conclusion: Roentgen-ray examination was negative at the end of the third month.

CASE 11 (30408).—A colored nullipara, aged 21, in whom the menses began at 14, and were regular, every four weeks, with a duration of four days, two changes at most, a day being required, had the last period, Feb. 24 to 27, 1919, which was shorter and scantier than usual. No flow had occurred since. Nausea and vomiting began early in March and continued to the middle of April. The probable date of confinement was estimated to be about November 15. Examination, June 25, disclosed the fundus within one fingerbreadth of the umbilicus. Roentgen-ray examination, June 26, failed to make a definite diagnosis of pregnancy. The patient was delivered, November 18, of a 7-pound boy. Conclusion: Roentgen-ray examination was negative at four and one-fourth months.

CASE 12 (35185).—A colored nullipara, aged 19, in whom the menses began at 14 and were regular every month, with a duration of five days, rather profuse, flowed normally in July, 1919, and again August 25 and 26, scanty. No flow had occurred since. Nausea and vomiting began the last of September. On roentgen-ray examination, October 30, a positive diagnosis could not be made. She was delivered, April 25, 1920, of an 8-pound boy. Conclusion: Roentgen-ray examination was negative at the end of the third month.

CASE 13 (25509).—A white quadripara, aged 26, in whom the menses began at 15, and were regular every thirty days, with a duration of five days, had a full term child Dec. 4, 1918, and nursed the baby one month. The flow returned the latter part of April and again May 23, in normal amount; no flow had occurred since. Nausea and vomiting began the last of June. Examination, Aug. 20, 1919, revealed the fundus about one-third the distance from the pubes to the umbilicus. The patient said she felt the first movements, October 4. When roentgen-ray examination was made, October 22, there was too much gas in the sigmoid and rectum to make a diagnosis. Examination, October 29, disclosed the fundus two fingerbreadths above the umbilicus. Roentgen-ray examination, October 30, revealed the outline of the fetal head. The patient was in the hospital on account of symptoms of toxemia, Jan. 1 to 10, 1920, and returned, February 8, in labor, complicated by influenza and pneumonia. The baby weighed 5½ pounds. Conclusion: Roentgen-ray examination was negative at the end of the fifth month, and positive at five and one-fourth months.

CASE 14.—A colored nonipara, aged 33, in whom the menses began at 15, and were regular every twenty-eight days, with a duration of three days, of normal amount, and the last period, August 18 to 21, of normal amount. There was a slight stain

for a few hours, September 20, but no flow since. There was no nausea. She had no recollection of the date of the first movements. The probable date of labor was estimated to be June 20. Examination, Feb. 18, 1920, revealed the fundus three-fourths the distance from the pubes to the umbilicus (corresponding to the end of the fourth month rather than five and one-half or six months, as estimated from the flow). Roentgen-ray examination, Feb. 19, 1920, did not detect any fetal structures. Examination, March 3, disclosed the fundus almost level with the umbilicus. Roentgen-ray examination, March 9, disclosed a large shadow in the pelvis which had the appearance of a fetus; but no definite bony structures could be made out. The patient was delivered, July 28, of an 8½-pound child. Conclusion: Roentgen-ray examination was negative at the end of the fourth month, and again at four and three-fourths months.

After reviewing the results obtained in these cases, it was decided to secure several more roentgenograms of pregnancies in the third or fourth month and, profiting by the experience obtained in the previous series of cases, attempt to demonstrate the fetal bones in the third month, if possible, and more constantly in the fourth month.

CASE 15 (35401).—A colored quadripara, aged 25, in whom the menses began at 13, and were regular, every twenty-eight days, with a duration of six days, of average amount, had the last period, June 16 to 17, 1920, which was shorter and scantier than usual. Nausea was noticed, August 15, and fetal movements were felt, September 25 (?), which had continued since. Examination, October 13, disclosed the fundus three-fourths the distance from the pubes to the umbilicus. Roentgen-ray examination, October 14, failed to establish a diagnosis of pregnancy. Examination, October 20, disclosed the fundus one fingerbreadth below the umbilicus. The patient did not return for another roentgenoscopy. Conclusion: Roentgen-ray examination was negative at the end of the fourth month.

CASE 16 (39047).—A colored nullipara, aged 24, in whom the menses began at 13, were regular, every twenty-eight days, with a duration of three days, two changes at most a day being required, and in whom there was no intermenstrual flow, had the last period, June 15, 1920, lasting only one and one-half days and being scantier than usual. No flow had occurred since. Nausea and vomiting began, August 1, and had continued up to the present time. No movements had been noticed as yet. Examination, September 29, revealed the fundus one-half way from the pubes to the umbilicus. Roentgen-ray examination, September 30, revealed the shadow of an enlarged uterus, but no bony structures. Examination, October 6, showed the fundus about two-thirds the distance from the pubes to the umbilicus. From a roentgen-ray examination, October 7, a diagnosis of pregnancy could not be made. Examination, October 20, disclosed the fundus more than three-fourths the distance from the pubes to the umbilicus. The patient did not return for another roentgenoscopy. Conclusion: Roentgen-ray examination was negative at three and one-half months, and again at three and three-fourths months.

CASE 17 (38992).—A colored nullipara, aged 16, in whom the menses began at 12, and were always regular, every twenty-eight days, with a duration of from three to five days, three changes at most a day being required, and in whom there was no intermenstrual bleeding, had the last period, May 10, 1920, which was normal. No flow had occurred since. Nausea and vomiting began the latter part of June and still continued. No movements had been noticed as yet. Examination, August 18, revealed the fundus one-half way from the pubes to the umbilicus; September 29, one fingerbreadth below the umbilicus. The patient was to have a roentgen-ray examination the following day, but did not appear on account of sickness. Examination, October 6, revealed the fundus practically level with the umbilicus. On roentgen-ray examination, October 7, the head and long bones were visible. Conclusion: Roentgen-ray examination was positive at four and three-fourths months.

CASE 18 (38435).—A colored secundipara, aged 21, in whom the menses began at 16, and were irregular, the interval varying from three to six weeks, the duration from four to five days, two changes at most per day being required, had the last period, April 25, 1920, which was normal. There had been no flow since and no nausea or vomiting. The first fetal movements were thought to have been felt, August 25, and had continued since. Examination, September 15, showed the fundus one fingerbreadth below the umbilicus. On roentgen-ray examination, September 16, the spine of the fetus was visible, but the head could not be outlined. Conclusion: Roentgen-ray examination was positive at four and three-fourths months.

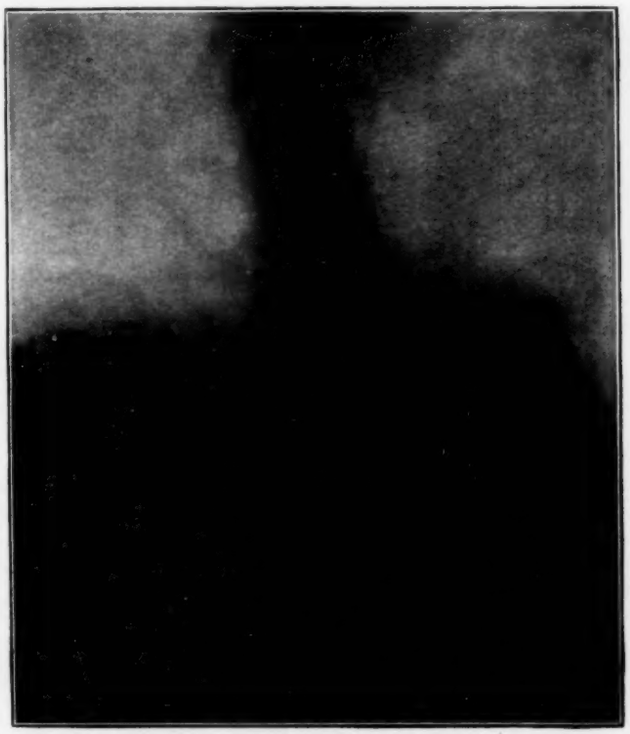

Fig. 4.—Pregnancy at eight months; vertex presentation.

The estimation of the stage of pregnancy at which the roentgen-ray examination was positive or negative in the last four cases was based entirely on the evidence furnished by the history of menstruation, nausea and vomiting, fetal movements and the height of the fundus, as these data had been found to correspond quite accurately to the date of labor.

SUMMARY OF RESULTS

The total number of roentgenograms taken was twenty-four. The earliest stage of pregnancy attempted was at two and one-half months; the latest stage about the end of the sixth month. From the end of the second to the end of the third month, one roentgenogram was taken and was negative. From the end of the third month to the end of the fourth month, five roentgenograms were taken and all were negative. From the end of the fourth month to the end of the fifth month, ten roentgenograms were taken and three were positive. From the end of the fifth month to the end of the sixth month, eight roentgenograms were taken and four were positive.

In other words, during the third month, no positive results were obtained; during the fourth month, no positive results were obtained; during the fifth month, positive results were obtained in one-third the cases;

and during the sixth month, positive results were obtained in one half of the cases. The earliest positive result was obtained at four and one-fourth months.

A FOURTH POSITIVE SIGN OF PREGNANCY

Since a roentgenogram which shows a sufficiently characteristic part of the fetal skeleton in utero is a positive sign of pregnancy, concerning which no two observers could possibly disagree, it must be regarded as evidence of the most positive kind. From the foregoing results it would seem apparent that the roentgen ray may be of value in the diagnosis of pregnancy at practically the same stage of gestation that the other three positive evidences are obtainable, namely, (1) hearing the fetal heart beat, (2) being able to outline the fetus by palpation, and (3) seeing and feeling its active and passive movements, and should be mentioned as the fourth positive sign of pregnancy. However, it should be emphasized that its diagnostic value in the second trimester of pregnancy is limited by the fact that a negative result does not necessarily mean that the patient is not pregnant. This is evident from the considerable number of negative results in this series; but, just as the fetal heart sounds, outlines and movements become increasingly recognizable as pregnancy advances beyond the fifth month, so the roentgen ray will be positive in an increasing percentage of the cases as full term approaches.

Attention may be called to the application of the "rule of fourths" in determining the stage of gestation, as illustrated above, particularly in Case 14, in which the level of the fundus indicated the end of the fourth month, which was later shown to be correct by the date of labor, although the menstrual history indicated that labor would occur much earlier.

From a review of the literature and from the results obtained in this series of cases, the following conclusions would seem justifiable, although it is admitted that a larger series of cases would have been desirable.

Fig. 1.—Pyelogram showing filling defect in kidney pelvis. Note the abnormal size and shape of the pelvis and increase in width of lumen of ureter.

CONCLUSIONS

1. A positive diagnosis of pregnancy has been made by demonstrating portions of the fetal skeleton in utero as early as the end of the fourth month of gestation (Edling,[3] Case 17).

2. The earliest positive diagnosis in this series of cases was obtained at the beginning of the fifth month of pregnancy (Case 9).

3. During the third month of pregnancy, roentgenoscopy is uniformly negative.

4. During the fourth month of pregnancy, a positive diagnosis may very exceptionally be obtained toward the last of this period.

5. During the fifth month of pregnancy, a positive diagnosis of pregnancy may be obtained in at least one third of the cases.

6. During the sixth month, a positive diagnosis may be obtained in at least one half of the cases.

7. During the seventh, eighth and ninth months of pregnancy, a positive diagnosis of pregnancy should be obtained in the great majority of all cases.

746 Peachtree Street.

PAPILLARY EPITHELIOMA OF THE KIDNEY PELVIS

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AND
ROBERT H. HERBST, M.D.
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Primary papillary epithelioma of the kidney pelvis may rightly be called a rare tumor. Watson and Cunningham,[1] in 1908, reported that Israel found only two cases of kidney pelvic tumors, as compared with sixty-eight in the kidney parenchyma, and that there was but one tumor (a papilloma) in ninety-four cases of renal and perirenal growths recorded at the Massachusetts General and the Boston City Hospital in ten years. Wilson,[2] in 1912, reported three papillomas, and according to Braasch,[3] only five have thus far been observed at the Mayo Clinic. McCown,[4] in a recent presentation of a case in which he reviewed the entire literature, found only ten cases reported by American authors and thirty-eight from foreign countries. In the discussion that followed his paper, Stevens, Hyman and Goldstein each mentioned personal experience with one, and Kretschmer with two cases of papillary tumor of the kidney pelvis. To this number we add the following case:

History.—A. J. P., a man, aged 46, entered the Presbyterian Hospital, Oct. 22, 1920, because of pain in the left loin, hematuria and occasional jaundice. His trouble began in April, 1919, with pain in the left kidney region severe enough to double him up. It lasted half an hour, gradually subsided, and left him covered with a cold sweat. He did not vomit or pass blood in the urine. He was free from trouble until March, 1920, when a similar attack occurred, this time persisting for forty-eight hours and radiating toward the bladder. He was relieved by morphin and the pain subsided gradually. During the attack he passed blood in the urine. Between March and August he had intermittent attacks of pain associated with hematuria. During August the hematuria was marked by the presence of bright red blood, and on the following day there was an acute urinary retention, for the relief of which he was catheterized. On removal of the catheter, dark red clots came away. Since that time he had never been entirely free from trouble, but the pain had been noticeably less severe. Occasionally during the last year his friends had noticed a yellow tinge to his skin, but he himself had not observed any jaundice.

1. Watson and Cunningham: Genito-Urinary Diseases **2**: 261, 1908.
2. Wilson, L. B.: The Embryogenetic Relationship of the Tumors of the Kidney, Suprarenal and Testicle, Collected Papers of the Mayo Clinic, 1912, p. 304.
3. Braasch, W. E.: In the Discussion on McCown's paper (Footnote 4).
4. McCown, P. E.: Papillomatous Epithelioma of Kidney Pelvis, J. A. M. A. **75**: 1191 (Oct. 30) 1920.

There had been no loss of weight, and he had worked practically every day. He denied venereal disease. The past history and family history were negative. He had been married eighteen years. Two daughters were in good health. His wife was subject to epileptic attacks.

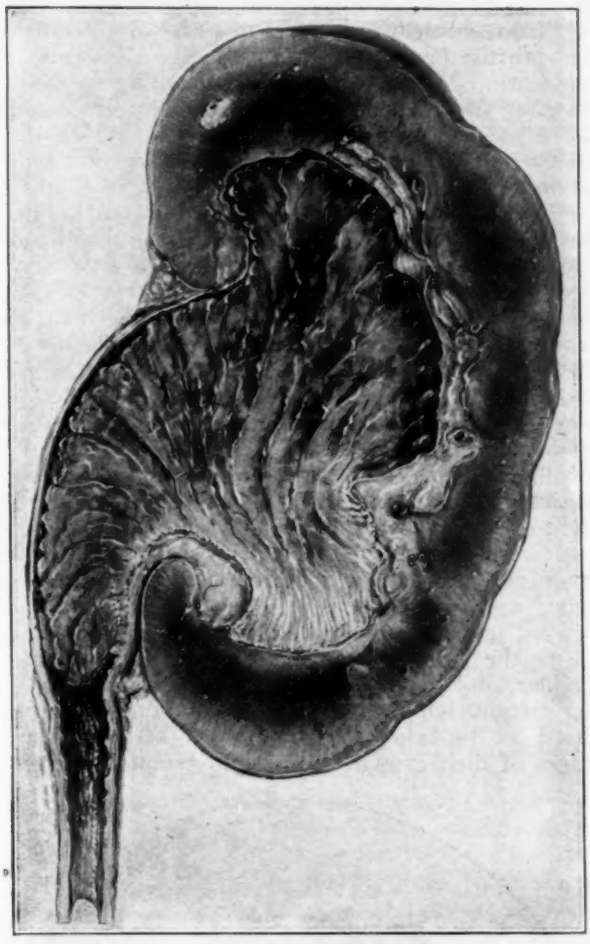

Fig. 2.—Longitudinal section of kidney through center of the papilloma. The tumor is attached at the ureteropelvic junction and along the lower margin of the pelvis.

Physical Examination.—The patient was somewhat emaciated, with a distinctly yellow complexion. Findings were normal except for the abdomen, the wall of which was held fairly rigid. There was tenderness on deep palpation over the left kidney, but no tumor could be felt. The liver and spleen were not palpable. The prostate and genitalia were normal.

On entrance, blood examination revealed: leukocytes, 15,900; hemoglobin, 90 per cent. The systolic blood pressure was 130; diastolic, 80. Roentgen-ray examination of the genito-urinary tract was negative for stones. The urine was normal.

Cystoscopy by Dr. Robert H. Herbst, November 23, revealed the bladder wall normal; the ureteral orifices tunnel shaped. The right orifice took a No. 6 catheter readily. The left stopped at 8 cm. After some manipulation it was advanced to 12 cm. The right kidney drained normally. The left drained 0.5 c.c. in half an hour. Cultures and cell count of urine from both kidneys and bladder were negative. Guinea-pigs injected, November 24, were negative to tubercle bacilli.

Specimens of urine, October 30 and November 1, showed albumin, red blood cells and pus.

November 1, Dr. Herbst passed a shadowgraph catheter and injected the kidney pelvis with thorium solution. The roentgenogram showed the pelvis greatly dilated, the calices obliterated, and a definite oval-shaped filling defect about 5 by 4 cm. occupying the central portion of the pelvis (Fig. 1).

Diagnosis.—In view of the history of intermittent bleeding and passage of clots, the pain referable to the left kidney, the absence of function of the affected side, the negative tests for tuberculosis, the evidence of an abnormal ureter by the difficulty in the passage of the catheter, and the clear-cut filling defect within the kidney pelvis without material increase in the size of the kidney shadow, a diagnosis of papillary epithelioma was made. A review of the fifty-three cases previously reported showed that the true pathology was determined in thirty-seven after removal of the kidney by operation, in twelve at necropsy, and in the remainder by the finding of bladder implantations. In not a single instance was it clearly stated that the condition was recognized previous to operation in the absence of a pathologic condition of the bladder. We feel, therefore, that this case is in that respect unique.

Operation.—November 21, the usual oblique incision was made. A somewhat enlarged kidney was readily freed from the surrounding tissues, but could not be delivered. The surface appearance was normal. The pelvis was large and bulging, about the size of a large hen's egg. The ureter was distinctly enlarged and the walls much thickened. Several large, soft glands were easily palpated just mesial to the kidney pelvis. It was the intention of the operator to perform a complete ureterectomy, but in view of these evident metastases already present, only the upper 3 inches of the ureter was removed with the kidney.

Pathology.—Gross: On section of the kidney along the convex border, the pelvis collapsed, allowing a soft, cauliflower-like, papillary tumor to bulge into the incision. It was about the size of a small orange. The parenchyma was thinned by pressure of the distended pelvis, was pale, and the pyramids were not distinct. The average thickness was about 1.2 cm. The tumor was adherent at the ureteropelvic junction and along the lower portion of the pelvic wall. Elsewhere it was easily separated by loose blood clots. It apparently did not invade the parenchyma, and did not extend downward into the upper 3 inches of the ureter (Fig. 2).

Microscopic.—The tumor presented the typical picture of a papillary epithelioma, in certain areas appearing quite benign (Fig. 3) and in other places distinctly malignant (Fig. 4). Beneath the mucosa of the ureter were isolated groups of what appeared to be cancer cells (Fig. 5).

Fig. 3.—Low power view of area relatively benign in appearance. Orderly arrangement of epithelium. Basement membrane intact. Few mitotic figures.

Postoperative Course.—The patient made a good recovery. After resting at home for two weeks he returned to work, at which he has continued every day. He has gained several pounds and feels much improved.

INCIDENCE

From an analysis of the cases thus far recorded, we find that papillary epithelioma is more common in

males than in females in the proportion of about 2:1. As to age, nearly one half occur between the fiftieth and sixtieth year, about one fifth between the fortieth and the fiftieth year, and the same number between the sixtieth and seventieth year. The oldest patient on record, that of Toupet and Guerniot,[5] was a woman, aged 86; the youngest, that of Kretschmer, was but a boy.

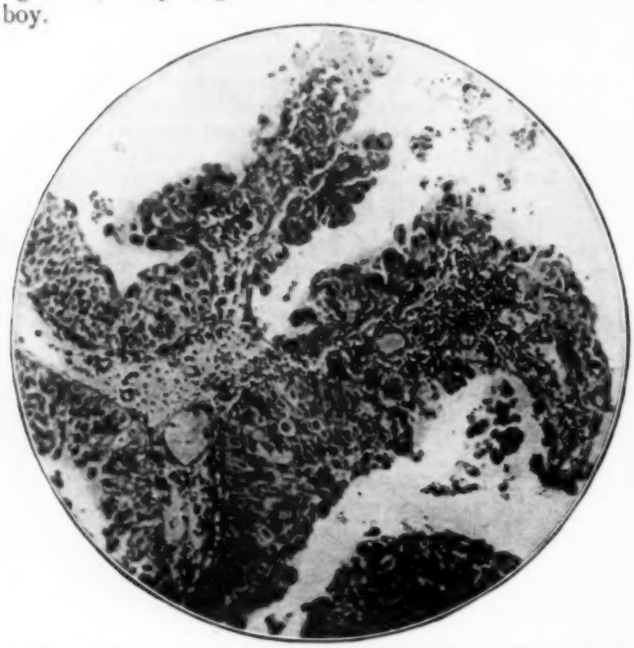

Fig. 4.—Low power view of field relatively malignant in appearance. Great variation in size of nuclei. Basement membrane not completely intact. Large number of mitotic figures.

ETIOLOGY

The etiology of these tumors is not known. It is reasonable to suppose that irritation, such as from a calculus, or chronic infection, might be a predisposing factor; yet, in the fifty-four cases from which the data in this report are obtained, infection was made note of but three times, and the presence of calculi in only ten.

PATHOLOGY

These tumors vary in character from multiple, small, isolated, budlike growths to a single, large, cauliflower-like mass filling the renal pelvis and producing as it grows destruction of the kidney parenchyma. The condition is usually unilateral, although Murchison,[6] in 1870, reported a death from uremia caused by obstruction of both ureters with clots derived from bilateral pelvic papillary tumors. They arise, as a rule, from the lining of the pelvis of the kidney, but, as in Wilson's cases, may originate in the terminal portion of the collecting tubules. Histologically, they resemble papillomas elsewhere in the urinary tract, the covering of the vascular connective tissue stalk being either a tall or short, oval, cylindric or club-shaped epithelium. They tend to bleed readily and the clots formed may obstruct the outlet of the pelvis, with a consequent hydronephrosis, or cause varying degrees of obstruction as they pass downward along the urinary tract. The tumor may start and remain localized in the kidney, but the striking tendency is to involve secondarily either by direct extension (as in McCown's case) or, by implantation (as in Lower's[7] case), the lower urinary tract. Of these fifty-four cases, twenty-five showed involvement of the ureter, while in eighteen the tumor had invaded the kidney, ureter and bladder.

It has been said that this type of growth may be primary in the bladder and, by mestastasis through the ureteral lymphatics, involve the kidney tissues. Haessler[8] has cited such an instance in a man of 77 years who had profuse hematuria during the five days preceding his death. Necropsy revealed a papillary epithelioma invading the renal parenchyma and a similar tumor in the bladder. The ureter was normal. The author assumes that the bladder was the primary site, and the kidney involved by metastasis through the ureteral lymphatics; but no evidence is presented pointing toward a pathologic condition in the ureteral lymphatics. Stevens[9] also has recently cited the case of a man, aged 70, who was seen in 1913 because of hematuria and frequent urination. Cystoscopy at that time revealed a pedunculated papilloma of the bladder near the left ureteral orifice. This was removed by snare and cautery. Nineteen months later he began to have severe pain in the right kidney region, and his urine contained albumin, casts and a few pus cells, but no blood. Three years later cystoscopy revealed an inflamed bladder mucosa and blood coming from the right ureteral orifice. Six months later the same findings were present. A diagnosis of renal tumor was made, and at operation a walnut-sized papilloma of the pelvis was found. It is assumed that in view of the delayed (nineteen months) onset of symptoms referable to the kidney, the papilloma was primary in the bladder, and the kidney involved secondarily through the ureteral lymphatics. This assumption evidently is based on the belief that tumors of this nature at all stages of their growth give rise to symptoms referable to the kidney; yet we find that, in Neelsen's[10] case, necropsy disclosed one half of the kidney pelvis filled by numerous villous growths only a few days after the

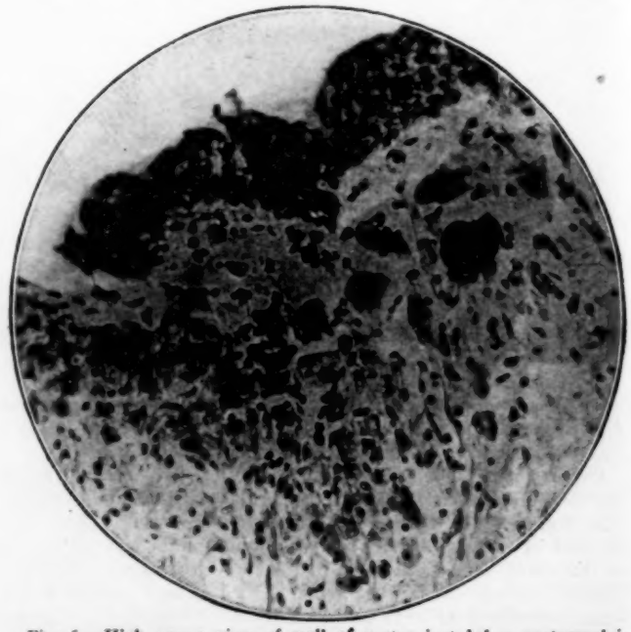

Fig. 5.—High power view of wall of ureter just below ureteropelvic junction. Mucosa normal. Submucous layer the seat of groups of malignant epithelial cells.

5. Toupet and Guerniot: Bull. Soc. anat. de Paris, 1898.
6. Muchison: Tr. Path. Soc. London **31**: 353, 1870.
7. Lower, W. E.: Neoplasms of the Renal Pelvis, with Special Reference to Transplantation in the Ureter and Bladder, Surg., Gynec. & Obst. **18**: 151, 1914.
8. Haessler, F. H.: Papillary Epithelioma of Bladder, Metastatic in the Kidney, J. A. M. A. **76**: 446 (Feb. 12) 1921.
9. Stevens, W. E.: Tumors of the Renal Pelvis, J. A. M. A. **74**: 1576 (June 5) 1920.
10. Neelsen: Beitr. z. path. Anat. u. z. allg. Path. **3**: 277, 1888.

patient's first symptom. In addition, as in Haessler's case, there is no evidence to show that the ureteral lymphatics were the pathway of the metastases.

The degree of malignancy of these tumors is often uncertain, but the findings of metastasis at operation or necropsy in fifteen of the fifty-four cases speaks against the likelihood of many of them being permanently benign.

SYMPTOMS

The symptoms vary considerably with the size of the tumor and the associated pathology. Hematuria is by all odds the most constant sign. It is usually intermittent in character, and may vary in severity from a slight cloudiness of the urine to a copious hemorrhage, as in Rayer's [11] case, in which the patient died from exsanguination. Clots are frequently passed, and when of sufficient size, as in our own case, may obstruct the ureter or outlet of the bladder. Pain is rather inconstant. It may be characterized by mild bladder irritation, a steady ache in the kidney region, or by severe colicky attacks similar to that seen with ureteral stone. It is not uncommon to find these attacks precede or follow the passage of clots. The course of these symptoms, if not interrupted by surgical treatment, may extend over a period of several years; but in the large majority of cases, termination is seen relatively early.

DIAGNOSIS

In spite of the rarity of occurrence of this type of tumor as compared with hypernephroma and tuberculosis, its presence should be kept in mind in all cases in adults when intermittent hematuria is noticed, especially when associated with pain in the kidney region. It should be strongly suspected if, the roentgenograms being negative for stone, there are colicky attacks of pain radiating along the course of the ureter, a diminished or absent function of the suspected kidney, and a palpable tumor mass in the loin. If, in addition, cystoscopy reveals a papilloma in the bladder or ureteral orifice, the urine contains unidentified epithelial cells, and the pyelogram portrays a filling defect in the kidney pelvis, the presence of a papillary tumor is practically certain.

TREATMENT

As stated by Braasch,[3] as far as treatment is concerned these cases may be divided into two groups, those with and those without bladder involvement. In the former nothing will suffice short of complete removal of kidney and ureter followed later by fulguration of the bladder implantations. If the procedure is reversed, endless trouble may arise. This is well illustrated by McCown's case, in which repeated fulgurations and later nephrectomy failed to bring permanent relief and had eventually to be followed by complete ureterectomy before bleeding could be controlled. Obviously, in those of the second group, removal of the affected kidney and entire ureter is indicated as soon as the diagnosis is made.

Presbyterian Hospital.

11. Rayer: Traité des maladies du rein.

Aims of Health Departments.—Many health departments as constituted today fall far short of the ideal in scope and activity. In many the aims are narrowed or confined to communicable disease, either by their own sluggishness or by the encroachments of more active agencies. The aims of health departments should be the eradication of preventable disease, the elimination of corrigible physical and mental defects, and the maintenance of all individuals in the best possible physical and mental condition.—A. J. McLaughlin, *Commonhealth*, Nov.-Dec., 1919.

THE MEDICAL PROFESSION AND THE PUBLIC*

WILLIAM J. MAYO, M.D.
ROCHESTER, MINN.

INDIVIDUALISM IN MEDICINE

On every side we see the acceptance of an idea which is generally expressed by the loose term "group medicine," a term which fails in many respects to express conditions clearly. In my father's time, success in the professions was more or less dependent on convention, tradition and impressive surroundings. The top hat and the double-breasted frock coat of the doctor, the wig and gown of the jurist, and the clerical garb of the ecclesiastic, supplied the necessary stage scenery. The practitioner of medicine today may wear a business suit. The known facts in medicine are so comprehensive that the standing of the physician in his profession and in his community no longer depends on accessories.

So tremendous has been the recent advance of medicine that no one man can understand more than a small fraction of it; thus, physicians have become more or less dependent on the skill, ability and specialized training of other physicians for sufficient knowledge to care for the patient intelligently. An unconscious movement for cooperative medicine is seen in the intimate relation of the private physician to the public health service made possible by the establishment of laboratories by the state board of health and similar organizations. On every hand, even among laymen, we see this growing conception of the futility of individual effort to encompass the necessary knowledge needed in treating the simplest and most common maladies because of the many complications which experience has shown are inherent possibilities of any disease.

It is well for America that the medical profession has recognized the necessity for organized scientific effort which is taking the place of former competitive medicine. Competitive medicine was the response of the individual physician to his training and environment. It fostered self sufficiency and jealousy. The physician has been the council for the prosecution and the defense, the jury and the judge. It has been necessary for him to acquire the facts, to sum up the evidence, and to give the verdict. Too often the facts that he acquired have been improperly interpreted.

MEDICAL COOPERATION

MacKenzie points out that medical treatment has always been in advance of knowledge, that treatment has been empiric, even experimental, and that knowledge has come later from the results of these unorganized attempts to palliate or cure the diseases of man. The medical profession has long recognized the great value of the facts resulting from the work in clinical laboratories, but only of late has it recognized the great practical value of the labors of the physiologist, the physicist and other heretofore cloistered departmental workers. The organization of departments of trained workers in special fields of medicine and allied sciences greatly aids in obtaining knowledge which permits a better interpretation of all the facts of the case by the diagnostician and brings knowledge closer to treatment. We can hope that eventually knowledge

* Read at the opening of the Cleveland Clinic, Cleveland, Feb. 26, 1921.

will precede treatment and that treatment will be based on knowledge, and not, as heretofore, largely on empiricism.

The corrective legislation which reflects the reaction of countries to the manifest failures of individualistic competitive medicine has been like the groping of a blind man. The leaders in these so-called health movements too often have not been members of the medical profession, which has at least all the knowledge and experience extant, but they have been largely politicians, men without knowledge or experience who have taken little advice from those who had knowledge. The general program has been based on an honest attempt to alleviate the condition and diseases of man, but unfortunately it has been based also on the political expediency of an appeal to the prejudices of some classes of voters. These abortive attempts at class legislation in medicine have not given better treatment to the sick man or even more treatment. Let it be said to the eternal credit of the medical profession that the sick have never lacked for medical attention because of poverty. And no matter how many the shortcomings of competitive medicine, the medical profession as a whole has always struggled to reduce sickness and to rid the earth of contagious disease; to this, no doubt, is due much of the misunderstanding in legislative bodies with regard to the motives of the medical profession. The average legislator cannot conceive that any man without an ulterior motive should ask for legislation which would reduce the business on which his livelihood depends.

No group of men is brought into contact with people quite so intimately as the members of the medical profession, yet there is something about this very intimacy which seems to prevent medical men as a whole from understanding mass psychology. The normal human being when well is not conscious of organs; he is little interested in preventive measures to maintain his health, unless sickness either of himself or of his family directs his attention to them. If he is ill he demands a remedy. This is true of public ills as well as physical ills, and every session of a state legislature is crowded with bills, remedies for specific evils, usually quack remedies, which do not strike at the root of the evils or prevent the suffering which they cause; for each little political ill a little political remedy is offered, legislative "patent medicines." It is difficult, therefore, in the face of the enormous number of immediately annoying, petty ills to secure legislation for fundamental health issues. Of each hundred dollars spent by our government during 1920, only one dollar went to public health, agriculture and education—just 1 per cent. for life, living conditions, and national progress.

The medical profession as a body is altruistic. Appeals for any purpose of human betterment are made to no class of citizens with greater certainty of ready response than to the medical profession. Collectively, physicians have little influence. The fact that treatment has for so long a time outrun knowledge, and that with little knowledge there are many kinds of treatment, injures the standing of the medical profession with the public.

HIGHEST INTELLIGENCE A POLITICAL LIABILITY, AND LOWEST INTELLIGENCE A MENACE, TO GOOD GOVERNMENT

Dr. Arthur Sweeney, in an article on "The Measure of Mentality," gives the results of testing the intelligence of 3,000,000 drafted men, grouped according to mental age: Class A, mental age 18 and over, 5 per cent.; Class B, mental age from 16 to 18, 10 per cent.; Class C +, mental age from 14 to 16, 18 per cent.; Class C, mental age from 13 to 14, 25 per cent.; Class C —, mental age from 11 to 13, 20 per cent.; Class D, mental age from 9 to 11, 15 per cent.; Class D —, mental age from 7 to 9, 7 per cent.

THE MEASURE OF MENTALITY *

Classes A and B, Superior and Very Superior		Classes C+, C, and C—, High Average, Average and Low Average		Classes D and D—, Inferior and Feebleminded	
Mental Age	Per Cent.	Mental Age	Per Cent.	Mental Age	Per Cent.
A 18+	5	C+ 14.5 - 16	18	D 9-11	15
B 16-18	10	C 13+ - 14.5	25	D— 7-9	7
	15	C— 11 - 13	20		22
			63		

* After Dr. Sweeney.

In one of Darwin's interesting essays he speaks of the mentality of childhood. The child up to 1 year of age is a little savage, biting, kicking, striking, without regard to personality. After this period, up to 5 or 6 years the child has no regard for the right of property. One child will take a plaything away from another, recognizing only force. Between the ages of 7 and 13 years the child displays well developed feudalistic tendencies with clan leadership; this is the Boy Scout period, during which children are organizable and obedient to their leader. Notice how closely this 7 to 13 normal mental age of childhood corresponds with Classes C —, D and D —, which shows that 42 per cent. are mentally children. Persons below average intelligence can be organized into groups which are easily led by specious argument, and therefore under cunning leadership they exercise political control entirely out of proportion to their numbers. On the contrary, Classes A and B, 15 per cent., composed of persons of high mentality, cannot be organized; there is almost nothing on which they will agree collectively, although individually they may act intelligently and often with altruism. This group comprises the persons who are vigorous critics of public measures but who will not vote; they are full of precept without example, pacifists, pink socialists, antivivisectionists and so forth, of little worth politically. These have ever been the ardent supporters of cults and quackeries. Politicians appreciate this fact and as a group consider the political influence of persons of the highest intelligence to be negligible. Many men elected to hold office would like to act wisely and in the interest of the public, but they receive no real support from the so-called upper class and thus are forced to become politicians and appeal to the lower class. The men elected to our legislatures may be said to be of at least average mentality. To be effective, power and responsibility must go together. While the legislators have great responsibilities, they have little power to act independently. The power which controls them is the organizable political power which represents the lower order of intelligence. We should not complain if the least intelligent exercise the privilege of the ballot. Rather let us say that they appreciate the ballot more than the so-called intelligent, and in this respect at least are better Americans. A great political burden is thrown on the average man. The high average, the average and the low average man form 63 per cent. of the total number of male voters. These are the common people who face life's sternest aspects, and with this experience are often enabled to

act with superior political intelligence. These people are, all in all, the best friends of the medical profession, and to them we must appeal. Persons in Classes D and D— (22 per cent.) do not think intelligently, but they act, and usually under bad leadership. The ignorant negro vote has been eliminated in the South, but congested in Northern cities it is a menace to good government. Is it wise to put the loaded gun of the ballot in the hands of persons who are mentally children, and of aliens who have no racial sympathy with Anglo-Saxon institutions? Education will do much but not everything to remedy the situation. Men are not born into the world intellectually equal. Equal suffrage doubles the electorate and introduces an element of the highest importance into the political life of the nation. Women are more conscientious than men, and as a group less organizable. They appreciate education, sobriety and peace. The life of a woman centers in the home and she can be depended on to do everything possible to benefit the home. The medical profession must present medical problems to the woman and to the average man.

FUNCTIONAL NERVOUS DISEASES THE SMOKE SCREEN OF QUACKERY

We cannot blind ourselves to the fact that functional nervous conditions may closely mimic physical conditions. Neurasthenia, psychasthenia, hysteria and allied neuroses are the causes of more human misery than tuberculosis or cancer. The tuberculous patient is always happy and "getting better," and at least the cancer patient comes to a termination of his miseries. My brother once said, "The neurasthenic enjoys bad health; the family and friends suffer." Our knowledge of all the nervous conditions which we have not proved to be physical is slight, and for their treatment an enormous number of quack remedies is used outside the medical profession, and unfortunately inside as well. To quote again from my brother, "All varieties of game are protected by a closed season. There is no closed season for the neurasthenic." The medical profession as a whole has not realized that for all practical purposes the cerebrospinal nervous system represents man, and that man is not so much concerned with whether his suffering depends on physical disease as he is with the fact that he suffers. The suffering is real to him, whether or not it is real to the medical man. Social conditions are the common cause of disaster to an unstable nervous system and lie behind the bulk of the nervous disturbances which mimic physical conditions, breed neurosis, and result in sorrow and misfortune. The patient demands a remedy, not prevention. Perhaps life obligations are the fundamental cause of the disturbances, and we cannot change the social condition of our patient. If relief is given it must be through change of mental attitude; after all, life is what we believe it to be and happiness is a state of mind, not necessarily a state of body. In homeopathy, mental suggestion appeared in the simplest form and was often effective in the treatment of functional disorders. We must remember the fact that most diseases are self limited and that nature tends to cure rather than to destroy. High dilutions, in two glasses, a teaspoonful each hour taken alternately, pleasantly suggest betterment. The opposition of the regular medical profession lengthened the days of homeopathy but shortened the days of so-called "allopathy," whose nasty medicines induced the patient in self defense to get well. Today homeopathy is a part of regular medicine, its follies have been dropped and the good added, and the sons of homeopathic practitioners, like the sons of the "allopathic" and eclectic practitioners are studying regular medicine which is broad enough to contain all honest searchers for the truth in medicine.

Christian science has capitalized and commercialized the mentally healing virtues of Christianity. Among all peoples in all times the prevailing religion has been successful in relieving sickness so far as mental suggestion could give comfort or indirectly affect the physical condition. To comfort the sick and those afflicted mentally as well as physically has been the great function of religion, and we see this effect in all its variations, from the cheering up of the downcast to the production of the hypnotic state. The great opportunity of Christianity lies in the moral, mental and physical misfortunes of man. I venture to say that people of this generation have not had the comforts of religion received by people of earlier generations. Religion is no longer such a potent force in the sick-room; I would not presume to say that too much time has been put on the state to come, but there appears to be a distinct loss of relation to the state of the living. In this field, so sadly neglected by the protestant churches, Christian science, while wholly devoid of science, at least brings the comfort of religion to bear on a great number of human misfortunes. If Christian science would confine itself to mental and functional disturbances of man it might do more good and less harm. The very absurdity of the book "Science and Health" has aided, perhaps, in obtaining effect; possibly one might say that the unstable type of mind nowhere better expresses itself than in the book "Science and Health," in which an appeal is made to similar minds of persons similarly situated. Gazing at the pages of this book apparently has the same effect on the reader that gazing on the crystal ball has on the subject of the hypnotist. Not all persons have sufficient imagination to accept the Christian science jumble. It takes real imagination to reach a hand into the air, bring it down empty and say, "See what I have in my empty hand."

It is said that the Chinaman and the East Indian worship wooden images. But they do not. To them the images are emblematic, and they need these physical emblems to bring the mind to bear on the religious side. Religious forms and ceremonials aid in impressing on the mind eternal truths. For people lacking in imagination and to whom Christian science cannot appeal, there are a host of other cults, each with its remedy, in which sufficient of the physical is present to give body to mental effect.

Osteopathy appears to be a combination of mental suggestion and certain definitely valuable mechanical practices. Anterior poliomyelitis once was called "the Scandinavian disease" because of its ravages in the Scandinavian countries. In Sweden massage was highly developed, and for years trained masseurs have been doing much for certain types of physical disabilities. The war has taught the medical profession the great value of active and passive movements and how much can be accomplished thereby in suitable cases of disorders of the muscles, bones and joints, and such treatment is now a recognized medical asset. Osteopathy, with all its absurdities, therefore, has had a certain degree of usefulness in this field, until recently neglected by the medical profession, but it has depended largely on suggestion for its effect. This cult has tried

to improve its educational basis but it is doomed. To tell a man that his ribs or knees or other visible parts of his anatomy are dislocated may be credited for a time, but if he compares these parts of his anatomy with those of members of his family, or perhaps joins a Y. M. C. A. physical training class where he may see other men's ribs and knees, he loses faith because the absurdity is evident. Poor osteopathy: Chiropractic has stepped in and taken the spine out of osteopathy. Every man knows that he has a spine, but it is behind him, he cannot see it, and therefore he cannot get those enlightening comparisons open to most patients of osteopathy. Chiropractic simplifies the whole theory and practice of osteopathy. The barber, the underpaid minister and teacher, and the clerk quickly acquire the jargon in chiropractic schools for a price. Chiropractic does less good perhaps than osteopathy, but it has a better alibi, with a shrewder conception of the possibilities of concealment of the absurd.

Can we wonder that the public at large fails to appreciate the essential differences between what we speak of as functional nervous diseases and their mimicry of the physical, when we as a profession have so little knowledge concerning these matters? In these cults is represented treatment without knowledge, in response to the desire of the people for a remedy for existing ills, real or imaginary. The "patent medicine" business is based on the same desire for a remedy and faith in a suggested cure. The public is satisfied with each new cult until its failure become known. Hope springs eternal in the human breast, and quack remedies and cults with new names take the place of the old.

As one looks, then, to the future of medicine, he sees the necessity of the earnest study of the relation of the nervous system not only to disease but also to unhappiness in all forms, resulting from all causes. It is trite to say that the public must be educated, when our own education is incomplete, our knowledge small. This problem is being attacked from many sides. The educational health work of the Rockefeller Foundation and other well known philanthropies in the elimination of the hookworm, and mosquito-borne, and other diseases, has been heaven sent and has helped every state in the Union to create health legislation for the public good. Individually persons will pay for a remedy for existing ills, even for treatment without knowledge; but collectively the public will not give money until knowledge outruns treatment by a margin so great that all may see and be convinced.

THE MEDICAL PROFESSION AND THE PUBLIC

The striking feature of the medicine of the immediate future will be the development of medical cooperation in which the state, the community and the physician must play a part. Just how shall this cooperation be effected? If conditions are studied as they exist abroad, the tendency will be found to develop so-called class health legislation. In Germany it was believed that health legislation would lead to earlier recognition of disease and better care of the sick workman and his family. Injuries and all kinds of disease were to be greatly reduced in amount and lessened in effect, but the results were anything but desirable. The plan did not lead to better care of the sick; they were cared for as badly as before. Doctors who could not make a living in any other way were obtained, chiefly, to fill the places created. As there was a certain element of free choice of physicians by the sick beneficiary, the doctor had to please the patient in order to hold the job. The system led to malingering which the honest physician could not check if he tried, and the result was that he lost his patient to an unscrupulous competitor. This form of dishonesty became so prevalent as to be a public scandal. Disability from sickness was not reduced but rather increased. The man with an injured finger who could have been a part time producer within a week did nothing until his finger was entirely well, perhaps for two months. There was no medical cooperation to give better care. In England the same plan is in use with the same results. Patients who were treated by physicians without charge before are now treated as badly at the expense of the taxpayer.

It is very evident that health insurance, while sound in theory, has not taken human nature sufficiently into account. The early organization of our hospitals shows the same one-sided tendency. American hospital organization was modeled on that of Great Britain. In the early days a hospital was a place where persons who had no homes, and charity patients, could go when sick. This ancient conception of hospitalization did not anticipate modern conditions. The continuance of this outgrown practice resulted in denying hospital care to the honest but poor taxpayer, and we had the extraordinary spectacle of a premium given to inefficiency and laziness, special hospital privilege for the unproductive person who was a liability instead of an asset to the community. The worthless were given all the benefits of modern science and group medicine which could not be obtained by the average man at an expense which he was able to bear.

I could never quite understand the point of view of the man who leaves a large amount of money for a charity hospital. The care of the poor and the unfortunate is as much the duty of a city as taking care of the streets or the sewers or the water mains. The community will do only those things which it must do. There is no reason why a man should give money to relieve the taxpayers of this just burden than there is why he should pay for the street paving or perform any other public function. What he should do, I believe, is to step in at the point where the public cannot or will not expend money, that is, to advance knowledge by research and investigation which will prevent sickness in the future, and furnish better care for patients suffering from certain diseases which require more study than is given in the average municipal hospital. If hospitals are to be a part of a plan of philanthropy, at least let their benefits be for all classes of the community, each patient contributing a just proportion of the expense according to his means; in this way is forwarded the cause of true Americanism, in which each man is taught to be self-supporting and to pay, so far as he is able, for what he gets, rather than to encourage mendicancy.

To sum up these reflections on the relation of the public to medicine I have at least a few words of comfort. I donned the uniform during the war, knowing that we as a nation were 100 per cent. right and believing that we were at least 90 per cent. efficient. The war ended: I still have my faith that we were 100 per cent. right, but my idea of public efficiency has dropped from 90 to about 50 per cent. Individually the American is the most efficient man on earth; collectively and politically, extraordinarily inefficient. Many varieties of human selfishness reduce our effi-

ciency to a low point, yet at heart 85 per cent. of American people are sound. The medical profession made a great record in the war. The degree of medical efficiency was higher, in my opinion, than that of any other similar body of men, and there was no medical scandal. This was largely due to the leadership of Surgeon-General Gorgas and of Surgeon-General Ireland. The average human being, however, distrusts trained ability and skill in every department of life, and much of the difficulty that was encountered in caring for the sick soldier was due to this distrust, the result of ignorance and prejudice. And yet America functioned on not much better than 50 per cent. average intelligence and was the greatest single factor in the ending of the war, and this was by reason of character and ideals, what Bismarck called the "imponderables." We can weigh many things, but not the results of human sentiment. America is today successfully functioning on the average intelligence, which is steadily growing as the result of publicity, a form of education to which the American is most responsive. Russia today is sadly functioning on the average intelligence of Russia, England and France are functioning on their highest intelligence. Their political systems afford an opportunity for service to their great men. Pierce Butler, one of the leading members of the American Bar Association, once remarked, "Under an autocracy the Ship of State glides smoothly through uncharted political seas, but when it goes on the rocks, every one on board is drowned; while under a republic, the passengers' feet are wet all the time but the Ship never goes on the rocks." There is much to be hoped for and much to be expected from a better understanding of medicine by the American public.

FROM THE ABSTRACT TO THE CONCRETE

The medical profession can be the greatest factor for good in America. The greatest asset of a nation is the health of its people. Our failures as a profession are the failures of individualism, the result of competitive medicine. The real job of the medical profession is the extension of knowledge of what the medicine of today is doing and can do in the future, and this must be done by collective effort. A frank recognition of the necessity for cooperation is necessary. One of the signs of the times is the development of such institutions as the Cleveland Clinic. Such an institution recognizes the rights of the sick man to more careful treatment. It recognizes that the cause of the sick man in this and future generations depends on education and research, and it provides that these things shall be done, not only as the result of philanthropy but also as a well thought out self-supporting plan under the guidance of the medical profession. Clinics of the nature of the Cleveland Clinic cannot be organized generally, but community of medical interests can be established everywhere. As I have previously pointed out, a medical building with a medical library where physicians can meet, common access to laboratories containing modern means of diagnosis with good technicians in charge, the whole managed and controlled by the physicians of a community, would enable every patient, rich or poor, to obtain proper treatment. A basic fee, like a club due, may be charged each physician, the remainder of the expense to be divided in proportion to each member's use of the equipment. Arrangements for mutual consultations for early diagnosis and for the proper handling of emergency cases should be made. The city's health and institutional work should also be cared for by the medical group at a decent remuneration, and the unexpended proceeds devoted to bettering the medical equipment. All these desirable arrangements may be possible by cooperation between the physicians of a community.

Properly considered, group medicine is not a financial arrangement, except for minor details, but a scientific cooperation for the welfare of the sick. Medicine's place is fixed by its services to mankind; if we fail to measure up to our opportunity it means state medicine, political control, mediocrity, and loss of professional ideals. The members of the medical fraternity must cooperate in this work, and they can do so without interfering with private professional practice. Such a community of interest will raise the general level of professional attainments. The internist, the surgeon and the specialist must join with the physiologist, the pathologist and the laboratory workers to form the clinical group, which must also include men learned in the abstract sciences, such as biochemistry and physics. Union of all these forces will lengthen by many years the span of human life, and as a byproduct will do much to improve professional ethics by overcoming some of the evils of competitive medicine.

RECURRENT DISLOCATION OF THE SHOULDER JOINT

A MECHANICAL CONSIDERATION OF ITS TREATMENT

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Recurrent dislocation of the shoulder joint following a primary traumatic dislocation is not an uncommon condition, and various operative procedures have been advocated in the attempt to cure it. No operative procedure as yet, so far as could be determined, has considered the muscular mechanics of the joint or the effects of muscular contraction as a factor in producing recurring dislocations.

In this discussion I will not take into consideration lesions of the shoulder joint in which fractures of the humerus or joint cavity exist, and are a cause of the dislocation. The mechanics of treatment, however, is not radically different.

It is well known that any joint injury followed by consequent disuse leads to muscle atrophy of all the muscles which are directly concerned with the control and function of that joint. These muscles, in relation to the shoulder joint, are the coracobrachialis, triceps, deltoid, supraspinatus, infraspinatus, subscapula, rhomboids and latissimus dorsi.

It is well recognized that the ligamentous capsule of the shoulder joint is an insignificant structure and is very lax, and that the shoulder owes its stability to its muscular capsule, formed by the subscapularis, supraspinatus, infraspinatus and teres minor muscles, and not to its ligamentous one. The muscular bellies of these muscles completely surround the joint and have large tendinous expansions at their insertions into the capsule.

The only portion of the joint capsule left unguarded by muscular insertions is that between the insertion of the triceps on the lower edge of the glenoid fossa and the subscapularis above. This is the portion of the

capsule which is supposed to be most frequently torn in these dislocations, and as a result of this primary tear there results a relaxation of this portion of the capsule which allows subsequent and recurring dislocations, always, however, the result of unbalanced muscular efforts.

The atrophy of the above mentioned muscles, all of which have a direct action in keeping the head of the humerus in the glenoid cavity, would naturally lead to a loss of this control more or less great; and, plus the presence of a weak, stretched or torn capsule, would establish an ideal condition for recurring dislocations.

PATHOLOGY

Any definite evidence apart from complicating fractures is generally lacking in any given case. The best evidence is that of Schultz,[1] who shows that the dislocation was caused in his cases not by a lengthwise tear in the capsule, but by the capsule's being torn loose from its attachment to the humerus or scapula. The capsule consequently could not repair itself enough to prevent subsequent dislocation.

Joessel [2] has observed cases in which the supraspinatus and infraspinatus muscles had been torn loose and retracted.

Thomas [3] believes that a tear in the anterior portion of the joint capsule is the one and only cause, due primarily to hyperabduction of the arm, and impingement of the head of the humerus on the taut capsule, the tip of the acromion being the fulcrum.

All of this evidence leads to the secondary conclusion that the muscular control of the capsule and therefore the joint is diminished, or lost, especially in certain positions of the arm. It is a fact that abduction and elevation are the two motions which lead to recurring dislocations, and consequently this loss of muscle control must be in those muscles which prevent dislocation with the humerus elevated and abducted. These muscles are the subscapular and the supraspinatus principally, as opposed to the normal action of the pectoralis major.

ANALYSIS OF MUSCULAR ACTION

The action of the muscles which have to do with the mechanical control of the shoulder joint is as follows: [4]

Pectoralis Major.—Adduction of humerus. Draws humerus forward; pulls upper portion of humerus inward and downward.

Deltoid.—Abducts humerus. Resultant action of all fibers is to drive head of humerus in glenoid.

Latissimus Dorsi.—Adduction of humerus; internal rotation of humerus. Tends when contracted with arm abducted to oppose pull of pectoralis major.

Supraspinatus.—Assists deltoid in abducting arm and fixes head of humerus in socket.

Infraspinatus.—Rotates head of humerus outward and, with teres minor, assists in holding head of humerus in socket.

Subscapularis.—Rotates head of humerus inward. When arm is raised, pulls head of humerus backward and downward. With the supraspinatus, infraspinatus, teres minor and teres major, it prevents forward displacement to head of humerus.

Coracobrachialis.—Draws upper arm forward. When contracted, tends to force head of humerus into glenoid.

METHODS OF CAPSULE SUTURE

Leaving now out of consideration the various methods of resection of the head of the humerus that have been practiced in the past, and later such unnecessary operations as devised by Loeffler [5] of using a strip of fascia from the thigh to fasten the acromion and the greater tuberosity together; the Schultz [1] method of nailing a piece of fascia over the line of capsule suture, and bone transplants by Eden,[6] or the muscle flap operation as devised by Ollerenshaw [7] and by Clairmont and Ehrlich,[8] we come to the consideration of the various authors who have used the capsule suture by different methods.

A certain number of good results have followed the pleating of the capsule in the hands of a certain number of operators, but there have also been many failures.

No one except Young [9] has really sensed the mechanics of the cause of recurrent dislocations, and he has not gone far enough in one way, and has gone too far in another, in my opinion. He advocates the partial division of both pectoralis major and latissimus dorsi muscles, with subsequent suture of the pectoralis major to the deltoid.

The success of many of the capsule pleating operations has been due to the fact that the subscapularis tendon has been shortened in the procedure, and the result is due to that fact rather than to the pleating of the capsule itself.

In other operations, in order to get a clear exposure of the joint capsule it has been necessary to divide a portion of the pectoralis major, which has later been left free or partially sutured. The subscapular tendon has also been divided and later sutured, following the pleating of the capsule. This suturing of the subscapular tendon, and dividing the pectoralis major tendon, are the two important factors, and are all that are really necessary. In pleating the capsule, the subscapular tendon is undoubtedly shortened and is the real cause of the good result and not the pleating of the capsule itself.

To go back to the muscle analysis presented above, it will be noted that the pectoralis major, especially the lower portion, is the one muscle which pulls the head of the humerus forward when the arm is abducted and elevated, the one position in which the dislocation almost invariably occurs. This force, combined with a lax subscapularis, must result in an anterior dislocation in this type of case. Anterior dislocations are not infrequently seen in cases of obstetric paralysis in which the subscapular muscle is paralyzed and the pectoralis major contracted. Complete division of the pectoralis major without subsequent suture and pleating of the capsule, but especially shortening of the subscapular tendon without division, are the two essentials for success.

The deltoid and coracobrachialis will hold the head of the humerus in place if given a chance; and by removing the pull of the stronger pectoralis major and taking up the slack in the stretched subscapularis, one can be assured of a permanent cure.

The good results reported by Burrell and Lovett,[10] Williams,[11] Thomas [12] and others, I believe, are due not so much to capsulorrhaphy as to the fact that they unwittingly either divided the pectoralis major and the subscapularis tendon and then sutured the latter, or

1. Schultz: Arch. f. klin. Chir. **104**, No. 1 (March 24) 1914.
2. Joessel: Delitsch. Ztschr. f. Chir. **12**: 167, 1880.
3. Thomas, T. T.: A Common Mechanism for Most Injuries of the Shoulder Region, J. A. M. A. **63**: 1018 (Sept. 19) 1914.
4. This analysis of muscular action is the result of having consulted Beevor, Cunningham, Gerrish, Gray and Piersol.
5. Loeffler, F.: Zentralbl. f. Chir. **47**: 324 (April 3) 1920.
6. Eden, R. T.: Zentralbl. f. Chir. **47**: 1002 (Aug. 14) 1920.
7. Ollerenshaw: J. Orthop. Surg. **2**: 255 (May) 1920.
8. Clairmont and Ehrlich: Arch. f. klin. Chir. **89**: 798, 1909.
9. Young, J. K.: Am. J. Orthop. Surg. **11**: 243 (July) 1913.
10. Burrell and Lovett: Am. J. M. Sc. August, 1897.
11. Williams: U. S. Naval M. Bull. **7**, No. 4 (Oct.) 1913.
12. Thomas, T. T.: Recurrent Anterior Dislocation of the Shoulder, J. A. M. A. **54**: 834 (March 12) 1910.

both. In one case the subscapularis was shortened, and in the other the pectoralis major was lengthened.

The complete division of the pectoralis major, then, should be practiced in all cases without subsequent suture as well as definite shortening of the tendon of the subscapularis. These two procedures are essential. Repair of other torn or stretched tendons, such as the supraspinatus and infraspinatus, may also be done, but are not as necessary. Capsulorrhaphy may also be performed in conjunctjon with these two primary steps, but is not an essential to success.

Complete division of the pectoralis major has been done by the author in about forty cases with no untoward results. The arm can be adducted quite as well as before, and no essential loss of function has been observed.

This paper is offered as a suggestion that these cases be treated on mechanically intelligent lines and not on the basis of the results of secondary joint and bone abnormalities due to recurring dislocations.

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UNUSUAL MANIFESTATIONS OF HEROIN INTOXICATION AND SYMPTOMS OF WITHDRAWAL

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The character of this habit-forming drug, its dosage and the symptoms during intoxication and after its withdrawal are of such special interest as to warrant the report of a case.

REPORT OF CASE

History.—A woman, aged 27, married, during a prolonged period of painful menstruation contracted the habit of using a narcotic. At first, she would inject hypodermically morphin sulphate, but soon she abandoned it and had recourse to heroin. After a period of several months of daily use of the drug, she came under my observation, saying that for the last twelve weeks she had consumed 30 grains of it every day by mouth.

Examination.—The most striking and unusual manifestations were those of the motor apparatus. While the patient lay in bed, every muscle of her body was continuously and uninterruptedly contracting. The abdominal wall showed rhythmic, wavelike elevation without any regularity: one rectus muscle contracted, then another, one oblique and then another oblique. At times, the anterior abdominal wall would rise. The intercostal spaces of the thorax would at times become deeper and then rapidly return to normal. The pectoralis muscles would suddenly become rigid and then rapidly relax. One could observe sudden contraction of the extensors of the thighs and of the legs and the extension of the feet dorsally. At another moment, the gastrocnemii would become very rigid and gradually relax, but soon again they would contract. Similar contraction of the biceps would bring up the forearms abruptly. A contraction of the triceps would abruptly extend the forearm. Curiously enough, the small muscles of the hands and feet were unaffected.

While in bed, the patient turned from side to side abruptly and sometimes curved her back in the position of opisthotonos. The muscles of the neck contracted rapidly: the contracted sternocleidomastoid muscles would throw the head from side to side with corresponding rapidity. The trapezius muscles would elevate the shoulders at each contraction. The face was strikingly grimacing. Frequently the angles of the mouth would be drawn up, showing the teeth. She frowned and wrinkled her forehead continuously. The orbitalis palpebrarum muscles would be equally agitated: the eyes would suddenly open very wide, remain in a state of contraction for a while, and then relax and close. The muscles of the eye globes were also affected: the eyes would roll and turn from side to side, upward and downward. The condition of the orbital cavities, together with the constant display of the frontal muscles, gave the patient's facies an appearance of frightfulness and extreme anger. The glossopharyngolaryngeal musculature was also involved. The tongue would frequently protrude and retract; there was a continuous attempt to swallow, and the contraction of the muscles could be heard at a distance. The voice was frequently interrupted and somewhat harsh and hoarse. Of similar interest was the state of the sphincter of the bladder. There was no incontinence, but when the patient commenced to urinate, the micturition would frequently be interrupted, so that it required some time before the bladder was emptied; evidently it was due to alternating contractions of the sphincter muscle.

The general characteristic of the muscular contractions was tonicity. After the muscle contracted its belly became very rigid; this extreme hardness remained for a few moments, and then it suddenly (not gradually) relaxed. The interval between the phases of contraction of individual muscles was brief in the short muscles but longer in the long muscles. For example, the contractions of the muscles of the back occurred after a longer lapse of time than those of the trapezii, so that turning from side to side or curving the dorsum was less frequent than shrugging the shoulders.

The patient was unable to stand still or walk, in spite of the fact that there was no paralysis of the limbs. As the hands were free from muscular contractions, she was able to hold objects placed in them, but she was unable to feed herself because of the repeated contractions of the muscles of the arm and forearm. The tendon reflexes were markedly increased in all extremities, but there was no other abnormal reflex. There was an extraordinary hypersensitiveness all over the body. The least touch or even approach to any portion of the body would precipitate and intensify the muscular contractions. The prick of a pin would throw the entire body into violent twitchings.

The patient's mentality was impaired; her memory for recent events was defective; at times she was confused; hostility and aggressiveness were quite pronounced. She would frequently pick up heavy objects and throw them violently at persons, including children, who were standing near by. She appeared to be in terror, constantly fearing that she would be attacked. On several occasions she was delirious and had visual hallucinations of a frightful character. She slept poorly, and would wake up frequently during the night and remain awake for an hour at a time. She often refused food, ate very little, and was losing in weight.

The heart action was precipitated, but the sounds were normal. The pulse rate was 120. Urinalysis revealed a heavy trace of albumin.

Treatment and Result.—The patient was kept in bed and given purgatives and diuretics. Heroin was rapidly reduced. The muscular contractions became less and less violent. When the daily dose of the drug was suddenly reduced from 5 to 2 grains, and then completely removed, the patient began to present an entirely different clinical picture. Convulsive seizures appeared. In onset, termination and general characteristics they resembled but somewhat differed from those of typical epilepsy. Suddenly she would begin to scream, would flex the legs over the thighs and the thighs over the pelvis, raise the forearms and hold them tightly against the thorax, flex the fingers and insert the nails into the palms. The abdominal muscles were rigid, the chin was raised, showing rigidity of the neck muscles; the eyes were staring, and respiration ceased. The patient groaned during the entire attack, which lasted only a minute. The tonic state of the entire musculature of the body was not followed by a clonic phase, which is usually observed in genuine epilepsy, and yet the patient was unconscious during the seizures and had total amnesia of their occurrence. Each attack was followed by a state of complete exhaustion, headache and mental hebetude. During the entire period of total withdrawal, which lasted three days, the convulsive seizures occurred frequently, from six to twelve a day. In the intervals between individual attacks, the patient had the muscular twitchings already described, but the latter were much milder and occurred less frequently than during the withdrawal period.

The convulsive seizures were so violent, the tonicity of the muscles during the seizure was so pronounced, that the respiration would cease, the face would become markedly cyanotic, and the entire condition would become alarming. A complete withdrawal of the drug was then considered dangerous. A return to the heroin in small quantities, 1/20 grain, three times a day, was first tried, but an increase was soon found to be necessary, as no amelioration could be obtained from small doses. With 2 grains, three times a day, improvement began. After an interval of three weeks a decrease of the daily dose was again attempted, but no ill effect was observed. After that, gradual diminution of the quantity was carried out, and within a period of three months, complete withdrawal of the drug was accomplished. The patient's convalescence was of long duration, as there was a pronounced state of neuromuscular asthenia over a period of many weeks. The recovery was complete.

COMMENT

An analysis of the muscular manifestations during the phase of gradual withdrawal of heroin leads to the diagnosis of tetany. It is true that the contractions were bilateral and intermittent like those in tetany, but close observation reveals these peculiarities: There were at no time contractions of the fingers, with the attitude (obstetric or writing), very frequently found in tetany. It was, indeed, curious to observe muscular contractions everywhere except in the distal terminations of the extremities. As to Trousseau's, Chvostek's, Hoffmann's, Erb's or Schlesinger's signs, all characteristic of tetany, it was impossible to affirm or deny their presence in the present case, since the least touch or approach would throw the entire body into violent muscular twitchings. An individual examination for each of these signs could not be attempted.

Tetany, as a rule, affects a small group of muscles at a time, although it may involve individual muscles of the entire body. In the present case, the muscles of the body were simultaneously involved and their contractions were frequently repeated; they were almost of a continuous character. The resemblance to tetany consisted in their tonic character, but they were of greater intensity. As to the element of pain which usually accompanies tetanic contractions, it is difficult to say, in the present case, as the patient's mentality was not to be relied on. The presumption, however, was that the patient was suffering during the muscular manifestations.

The phenomena during the period of withdrawal of heroin presented great similarity to those of epilepsy, but they were not completely identical. There was apparently loss of consciousness and genuine postepileptic amnesia for the manifestations occurring during the attack. The convulsive seizures were limited only to the tonic phase of epilepsy. On the other hand, in epilepsy the tonic contractions affect the extensors of the extremities, that is, the arms and legs are usually violently extended. In this case, there was intense flexion of the limbs; the arms were flexed and held tightly against the thorax, the legs against the thighs and the thighs against the pelvis. The sudden onset and similar termination, the unconsciousness, the amnesia, the extreme rigidity of the muscles during the attack—all these features justify the diagnosis of epilepsy with the special characteristics that the tonic manifestations were limited to the flexor group of muscles of the limbs instead of to the extensors, and that the clonic phase was wanting. The case under discussion, therefore, is of unusual interest on account of the phases presented during intoxication and disintoxication.

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THE AURICULAR HEART SOUNDS *

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The auricular heart sounds are not appreciable in the normal heart, but it is well established that they may be audible in certain cases of heart block. The question naturally arises, Why? A consideration of some of the known facts pertaining to the sounds produced by systole of the auricles would seem to suggest an answer to the question.

Burton-Opitz [1] states that the contracting auricles cause a sound as well as that due to ventricular systole, but that the former is inaudible owing to the smallness of the mass of tissue involved. Bridgeman [2] has reported the occurrence of a normal presystolic sound detected in the electrophonograms of boys. Its rate of vibration was about 25 per second and therefore, he states, below the limits of audibility to the human ear. This author suggests, and in fact it is generally accepted, that the presystolic vibrations noted in his electrophonograms are the instrumental record of a sound produced by auricular systole.

But to fall back upon the smallness of the mass of tissue involved or the low rate of the vibrations, or both, does not satisfactorily answer why the auricular sounds may be heard in some cases of heart block. Thus, in cases of complete heart block in which the ventricles are contracting slowly at their own rhythm and the auricular rate is normal, and therefore much faster than the ventricular, the auricular systoles occurring during diastole may not only be detected by instrumental means but are often appreciable to the human ear as faint sounds. Lewis [3] suggests that the reason the auricular sounds are not heard in the normal heart is that the auricular and ventricular systoles occur too close together.

In heart block when the contraction of the auricles may be audible, the human ear may sometimes appreciate a double sound, and an electrophonogram [3] clearly shows the dual nature of the sound. The first element may be explained as produced by the tension of the contracting auricular muscle, while the second is probably due to the vibrations caused by the tension of the suddenly closed auriculoventricular valves, which occurs just at the end of the auricular contraction.

Lewis further states that "there is no intersystolic period," which at once sounds incongruous with the a-c interval of the phlebogram, the P-R interval in the electrocardiogram, and what is known of the rate of conduction across the bundle of His. Also, if the production of the auricular sound, though on a smaller scale, is analogous to that due to ventricular contraction, the former should begin with the "setting" of the auricles and continue until the highest intra-auricular pressure has been produced.[1] In my opinion there should be a period before the onset of the sound of ventricular systole, namely, the first heart sound. An examination of the excellent diagram in Lewis' recent book [4] would allow about 0.055 second for the interval in question. If Bridgeman's presystolic sound,[2] as seems probable, is of auricular origin, the space between

* From the Heart Service of the Boston City Hospital.

1. Burton-Opitz, R.: Textbook of Physiology, Philadelphia, W. B. Saunders Company, 1920, p. 289.
2. Bridgeman, E. W.: Notes on a Normal, Presystolic Sound, Arch. Int. Med. **14**: 475 (Oct.) 1914.
3. Lewis, T.: Lectures on the Heart, New York, Paul B. Hoeber, 1915, p. 61.
4. Lewis, T.: The Mechanism and Graphic Registration of the Heart Beat, New York, Paul B. Hoeber, 1920, p. 24.

it and the succeeding first sound is 0.03 second. Thus, the electrophonograms from these two authors show an interval varying from 0.03 to 0.055 second. Now, it is conceivable that the human ear can detect this interval, short as it is; for when the third heart sound is present (in 65 per cent. of those under 40 years of age [5]) there is small difficulty in appreciating its separation from the preceding second sound. Reference to the time relations of the cardiac sounds, as given by Burton-Opitz,[1] discloses from 0.02 to 0.08 second as the duration of the interval separating the third and second sounds of the heart.

In view of the fact, therefore, that the human ear will readily detect the short period separating the third and second heart sounds, it is surprising that it consistently fails to appreciate a time interval between the faint auricular sounds and that of ventricular systole. It is because, save in heart block, a comparable period does not exist. I therefore agree with Lewis that the auricular and ventricular systoles occur too close together to permit appreciation of an interval between them; but, as stated above, I doubt the accuracy of the statement, "There is no intersystolic period." The auriculoventricular interval does, of course, exist; but it is occupied, if my conception is correct, by the second of the auricular sounds.

The analogy of the sounds produced by ventricular systole serves to make the foregoing easier to understand. The contraction of the ventricle, as is well known, produces a sound, the first heart sound, which persists until the maximum intraventricular pressure has been achieved. Systole then continues in silence the output of blood from the ventricles until its termination, which is marked by the second heart sound due to the abrupt closure of the semilunar valves. As already stated,[3] systole of the auricles also produces two sounds, but the separation between them is almost nil because of the fact that the contraction of the auricles is not sustained in type. The second component of the auricular sound follows promptly on the first, and its vibrations may well fill the interval of 0.055 second which a diagram [4] of the heart cycle would allow before the onset of the sound due to ventricular systole. That the sound of the contraction of the auricular muscle and that of the closure of the auriculoventricular valves, caused by the former, should lack an appreciable separation is consistent with the work of Henderson,[6] who has shown that, in the normal heart, auricular systole impels only a trifling volume of blood into the ventricle. The same physiologist has very prettily demonstrated [7] that a mere wave passing through the auriculoventricular orifice may successfully close the valve.

It is suggested, therefore, that in the normal heart there may be five sounds, namely, the first and second auricular, the first and second ventricular, and at times the well-known third heart sound. The auricular sounds are faint and not separated by an appreciable interval. The second of the auricular sounds fills up the gap which should conceivably represent the auriculoventricular intersystolic interval. This would seem to explain more reasonably the failure to detect the sounds of auricular systole in the normal heart, though they may often be heard in cases of heart block in which the auricular contractions occur in the time of ventricular silence. It is also, of course, probable that in many cases the vibrations caused by auricular contraction are below the level of audibility to the human ear.

5. Thayer, W. S.: Further Observations on the Third Heart Sound, Arch. Int. Med. **4**: 297 (Oct.) 1909.
6. Henderson, Yandell: Am. J. Physiol. **16**: 353, 1906.
7. Henderson, Yandell, and Johnson, F. E.: Heart **4**: 69, 1912-1913.

CONCLUSIONS

1. The sounds produced by auricular systole are faint and may often be below the level of audibility.
2. Systole of the auricles is marked by two sounds, which are related to its intitial phase and termination just as the first and second heart sounds are to the contraction of the ventricles.
3. As the contraction of the auricles is not sustained after the maximum tension has been achieved, the auricular second sound follows almost immediately on its first sound.
4. The second sound produced by the contracting auricles, namely, that due to the closure of the auriculoventricular valves, occurs during the auriculoventricular intersystolic period.
5. The filling of this intersystolic period by the auricular sound is suggested as a more reasonable explanation of the well known fact that the auricular sounds are never detected save in cases of heart block, when the auricular contractions may occur well separated from those of the ventricles.

510 Commonwealth Avenue.

SPECIFIC PRECIPITIN FOR BENCE-JONES PROTEIN *

LUDVIG HEKTOEN, M.D.
CHICAGO

Nov. 1, 1845, Dr. Henry Bence-Jones [1] in London received for analysis from Dr. Watson a thick yellow fluid accompanied with this writing:

> The tube contains urine of very high specific gravity; when boiled it becomes highly opalic, on the addition of nitric acid it effervesces, assumes a reddish hue, becomes quite clear, but, as it cools, assumes the consistence and appearance which you see; heat reliquifies it. What is it?

The patient was a man of 45 who died after an illness of about fifteen months; postmortem examination revealed the sternum, ribs and vertebrae soft and infiltrated with grayish gelatinous masses, and MacIntyre [2] regarded the disease as a malignant tumor of the bones and called it "mollities and fragilitas ossium." Undoubtedly this was a case of myeloma, and it forms the starting point of an interesting chapter in pathology.[3]

Through the kindness of Dr. Charles A. Parker, I have been able to study the precipitin reactions of the Bence-Jones protein in the urine and blood of a typical case of myeloma under his charge in the Cook County Hospital in Chicago; and Dr. Waltman Walters of the Mayo Clinic, Rochester Minn., was good enough to send me samples of urine from two of the three cases of Bence-Jones proteinuria studied by him [4] which I have used in a number of tests. Rabbits have been

* From the John McCormick Institute for Infectious Diseases.

1. Bence-Jones: On a New Substance Occurring in the Urine of a Patient with Mollities Ossium, Phil. Tr., London **138**: 55, 1848; Edinburgh M. & S. J. **74**: 362, 1850.
2. MacIntyre: Case of Mollities and Fragilitas Ossium, Accompanied with Urine Strongly Charged with Animal Matter, Med.-Chir. Tr., London **33**: 211, 1850; Edinburgh M. & S. J. **75**: 157, 1851.
3. The most complete presentation of myeloma at hand is by Arvid Wallgren: Untersuchungen über die Myelomkrankheit, Upsala, 1920.
4. Walters, Waltman: Bence-Jones Proteinuria: A Report of Three Cases with Metabolic Studies, J. A. M. A. **76**: 641 (March 5) 1921.

injected intravenously every four or five days four or five times with increasing quantities of urine containing Bence-Jones protein. The amounts injected have been 2, 4, 8, 12 and 16 or 20 c.c. as a rule, and the animals have been bled on the seventh or eighth day after the last injection because at that time the antibody content of the serum usually has reached its high point. The tests are made in small tubes by the contact or ring method, a small quantity of antiserum being placed below the dilution of urine or blood serum, and the results are read after one hour at the room temperature. Briefly stated, I have found that the serum of rabbits injected as described may contain a specific precipitin or precipitins that cause precipitates in urine or blood serum containing Bence-Jones protein. Depending on the concentration of the Bence-Jones protein on the one hand and of the precipitin on the other, such precipitation may be obtained in dilutions of urine from say 1 : 20 up to as high as 1 : 32,000 or 40,000. In certain cases low dilutions of urine may not react while higher dilutions do—another illustration of the so-called prozone of antigen-antibody reactions.

SPECIAL METHODS REQUIRED

As urine containing Bence-Jones protein usually contains small quantities of ordinary proteins also, special methods are necessary to demonstrate conclusively the specificness of the Bence-Jones precipitation:

1. Positive reactions are obtained with the Bence-Jones precipitin serum in dilutions of the urine far beyond the highest dilution giving precipitation with ordinary antihuman rabbit serum (rabbits injected with human serum) of far greater precipitating effect in dilutions of human serum than the Bence-Jones antiserum.

2. On removal of the ordinary proteins from the Bence-Jones urines by precipitation with antihuman serum, the Bence-Jones protein is left behind and now no precipitate takes place except with the Bence-Jones antiserum and in practically as high dilutions of the urine as before.

3. All the precipitins in Bence-Jones antiserum for the serum albumins and globulins may be removed by adding suitable quantities of human serum followed by centrifugation after some hours, a procedure that leaves behind pure Bence-Jones precipitins in about one-half the original concentration. This purified Bence-Jones antiserum may give reactions with blood serum in cases of myeloma, showing conclusively the presence in the blood of Bence-Jones protein, and it goes without saying that it can be used to detect this protein in other fluids as well. By mixing the myeloma serum with Bence-Jones antiserum the Bence-Jones protein may be removed completely, and by treatment with ordinary antihuman serum the serum albumins and globulins may be taken out without removing the Bence-Jones protein.

Further details will be published later, when there will be considered also previous observations of immune reactions of Bence-Jones protein which, however, do not seem to have dealt with specific precipitins. Finally, we have in the precipitin reaction of Bence-Jones protein a good example of the fundamental relations, emphasized especially by Wells,[5] that exist between chemical structure and immunologic specificness, the latter being in all probability merely another expression of chemical specificness.

5. Wells, H. G.: Chemical Pathology, Ed. 4, 1920, p. 165.

Clinical Notes, Suggestions, and New Instruments

VERMIFORM APPENDIX, WITH SUPPURATION, IN FEMORAL HERNIA

A. D. HOIDALE, M.D., TRACY, MINN.

Keen[1] makes these statements relative to the frequency of the appendix in femoral hernia:

"Of 1,586 hernias operated upon in the clinic of Colzi, Florence, the appendix was present in 27. At the hospital for Ruptured and Crippled, in 2,200 cases of hernia operated upon, . . . the cecum and appendix, either alone or in combination, were found in 36 cases. In not a single one of these cases was the appendix found in a femoral hernia. . . . I cannot agree with the opinion of Wood, that the appendix is more often found in femoral than inguinal hernia. I have operated upon 140 cases of femoral hernia and have never seen a hernia of the appendix, while in 1,874 cases of inguinal hernia it has been found in 36 cases."

REPORT OF CASE

In 1916, Mrs. C. H., aged 60, consulted me about a swelling in the right femoral region, which caused her no discomfort and disappeared on lying down. She had always been in good health and active, the mother of several children. Femoral hernia was diagnosed and operation advised, which was refused. Aug. 26, 1919, I was called into the country to see her. On the night of the 23d she went to bed feeling as usual, but the next morning she noticed some pain in her right leg on trying to rise, and then discovered that the hernia had not disappeared as usual during the night. She stayed in bed. On the 25th she began to feel somewhat sick and nauseated, but not ill enough to think it necessary to call a physician. On the 26th she was quite ill; there was no particular pain, except some radiating down the leg; she was somewhat nauseated most of the time, with anorexia and general weakness.

On examination I found the temperature 100; the pulse 130, rather weak and irregular; the face flushed; the appearance in general was that of fairly profound toxemia. The swelling in the groin was about the size of a hen's egg, very tense and tending to redness. There had been stools each day, progressively smaller. The general appearance of the patient was very unfavorable. Since it was late in the day of the 26th, I advised the application of ice bags to the swelling, and proctoclysis. On the 27th conditions were about the same, though the patient had rested better during the night. We moved her in to the hospital, where supportive measures were continued, since the heart condition was so bad that there seemed no hope that she could weather the shock of any operative procedure. The swelling became noticeably more red. On the morning of the 28th it was decided that we should open the hernia under local anesthesia. This I did by infiltration about the noninflammatory base. Incision was followed by a gush of pus. A conglomerate mass of necrotic tissue was found, so adherent that it was impossible to differentiate its structure. In trying to separate the mass into various parts and find an opening into the sac, I came across what looked like the appendix, but decided that it was more likely the fallopian tube. By pulling up on the mass, I could discern at its base what appeared to be some discolored bowel.

If it was the latter, the possibility of having to resect a portion of the bowel presented itself. The case being desperate, it was decided to open the abomen in the midline. An incision extending from the umbilicus to the pubes was made, under local anesthesia. The mass in the femoral opening was found to consist of the hernial sac, a large mass of omentum, the appendix, and a small portion of the cecum at the base of the appendix. After a thorough cleansing of the tissues in the femoral opening, all of which were necrotic except the cecal portion, and packing off the abdominal contents carefully, the whole mass was pulled back into the

1. Keen, W. W.: Surgery, Philadelphia, W. B. Saunders 4: 78, 79, 1910.

abdomen and out through the abdominal incision. Up till the time that traction was made on this mass to pull it back, everything had been done under procain (with epinephrin), without any undue complaint from the patient; but at this stage it became necessary to give a slight amount of ether. The necrotic sac, omentum and appendix were removed, and drains were put in through the femoral opening and at the bottom of the abdominal incision. The condition of the patient at the end of the procedure was apparently as good as when she was placed on the table. She made an uneventful recovery, except for some fat necrosis in a small portion of the abdominal incision which delayed healing somewhat, and the developing of a parotid abscess. At this writing she is well and strong at the age of 65.

Evidently the appendix had become abscessed within itself or had ruptured with extrusion of its contents, after its incarceration in the hernial sac, thus starting the abscess formation. The cecum at the base of the appendix had begun to take on a necrotic aspect, but not sufficient to warrant the added risk of resection.

TWO CASES OF HEMORRHAGE FOLLOWING PERITONSILLAR ABSCESS

WILLIAM J. THOMASSON, M.D., NEWPORT, KY.

CASE 1.—E. C., a man, aged 45, who had had frequent attacks of tonsillitis and quinsy all his life, was seen by me for the first time, May 2, 1920. The patient was an active business man with a history of diabetes. At no time were we able to find more than a trace of sugar while he was under observation. He gave the history of tonsillitis with quinsy of a week's duration. The left tonsil was much swollen, the uvula was pushed to the opposite side, and the swollen tissue gave every evidence of pus in the supratonsillar space. The abscess was opened. The tissue covering the abscess was so thin that the knife punctured it as readily as it would a toy balloon. A large quantity of pus was evacuated. May 5, I found the right tonsil swollen and an active quinsy present. A rather deep abscess was opened, and a small amount of pus was found.

On the morning of May 12, ten days after the first abscess was opened, while the patient was in the bath room, he was taken with a sharp hemorrhage, and the loss of blood was estimated at a pint. The hemorrhage had stopped when I reached the patient, but a small amount of blood was found oozing from the site of the abscess on the left side. The patient was put to bed and quietude insisted on. He ate his noonday meal, had a very light supper, and at 8 p. m. left his bed and walked to the bath room, where he again had a severe hemorrhage. When I saw him fifteen minutes after the hemorrhage started, the blood was pouring from his mouth, and the bath room was covered. We estimated the loss as much greater than that occurring at the first attack. The man was put to bed, morphin given, and pressure made to the point of hemorrhage. His family physician and I stayed with him all night, and before we left him the abscess space was packed with 1½ yards of ¼ inch plain gauze. A consultation was held in the afternoon and the question of ligating the carotid was considered and rejected. At this consultation the packing was removed. The cavity was the size of a small English walnut, and a large blood vessel could be seen pulsating in the cavity. The wound was again packed with iodoform gauze, and the packing was repeated twice a day until the wound had healed. The amount of gauze was lessened each time to allow healing by healthy granulations from the bottom of the wound. Plain gauze was used for the first packing because it was all we had.

The patient was given 10 c.c. of horse serum every twelve hours, beginning the morning after the hemorrhage and continuing until four doses had been taken. An anaphylaxis followed, which was unpleasant to the patient but soon disappeared under alkaline baths. The man was kept in bed for two weeks, a nurse being with him night and day. He was not permitted to sit up or exert himself. He was given a good, substantial diet, and at the end of three weeks was able to get around his room. He made a complete recovery.

CASE 2.—J. U., a man, aged 48, had tonsillitis followed by bilateral peritonsillar abscess. The first abscess ruptured spontaneously, Jan. 2, 1921; the other side ruptured, January 5, a few hours after the second abscess ruptured. There was a brisk hemorrhage from the site of the first abscess. The family physician was called and the man continued to bleed. He was taken to the hospital late in the afternoon. When I first saw him, blood was oozing from the left cavity behind the tonsil. This was three days after the rupture of the first abscess. The cavity was packed with iodoform gauze, 1 yard of ¼ inch gauze being used. Morphin was given at once, and preparations were made for the use of horse serum. It was learned that the patient was an asthmatic; the horse serum was not given but held in readiness in case a severe hemorrhage occurred. The cavity oozed all night, but when I saw him at 10 a. m. the bleeding had stopped. The packing was removed and the wound was clean, and no more gauze was used. From the anemic condition of the patient, I feel safe in saying that he had lost a large amount of blood before entering the hospital. At the end of one week he returned home and made a good recovery.

COMMENT

In the first case, the bleeding occurred after a late incision of the abscess, and in the second, after a spontaneous rupture of the abscess.

These two cases convince me that an early incision in a peritonsillar abscess is much safer to the patient than a late incision or a spontaneous rupture; for, if the abscess is let alone until late, the pus, by necrosis or pressure, may erode the tonsillar arteries or even the carotid, causing death.

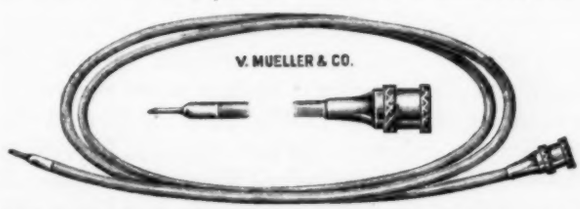
942 York Street.

A NEW INJECTION CATHETER

E. W. WHITE, M.D., CHICAGO

The appliance consists of a No. 7 ureteral catheter, to one end of which is attached a platinum needle and to the other end a suitable female fitting for a Luer syringe. The needle is 25 gage and approximately three-eighths inch long. In order to be assured of permanence in the connection of the needle, we have had it constructed thus:

A thimble, slightly larger than the catheter, was made of nickled silver. The platinum hypodermic needle was brazed with silver solder into this thimble. The inner portion of



Injection catheter, showing needle and Luer syringe fitting in detail.

the thimble was threaded and tightly screwed on the catheter. This in itself would probably be sufficiently strong to make a permanent connection; but, in addition, we have had a fine pin placed crosswise through both thimble and catheter, thus anchoring the fitting securely. The same method was used for the attachment of the fitting for the syringe.

This catheter is satisfactorily used through any operating cystoscope and is indicated in any condition within the bladder or deep urethra in which any anesthetic effect is desired by infiltrating the mucosa. We have used it with much satisfaction in the treatment of frequency of urination, of supposed unknown origin, in women, particularly in those cases in which the pathologic condition is limited to the trigonum. During the last year, we have seen a great many cases of frequency of urination of this type in women, in whom all other findings were absolutely negative, except a terrific engorgement of the small vessels of the trigonum. These patients have been given prompt relief, and, in many cases, permanent relief, by infiltrating the trigonum with quinin and urea hydrochlorid through the injection catheter.

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SATURDAY, APRIL 2, 1921

EXPERIMENTAL STUDIES OF EPIDEMIC ENCEPHALITIS

By intracerebral injection of emulsions of brain from patients dead of epidemic encephalitis, Levaditi and Harvier [1] produced lesions in rabbits that appeared similar to those in man, and consisted essentially of a mild meningitis in which lymphocytes and plasma cells predominated, of perivascular infiltration in the gray matter and infiltration with polymorphonuclears. From rabbits a like disease has been transferred to guinea-pigs and occasionally to monkeys, also by intracerebral and other injections of brain emulsions. It was found that the incubation period varied with the animal, the portal of entrance, and the activity of the virus. The incubation period for intracerebral injections of rabbit brain was from four to six days for rabbits, six days for monkeys, and from seven to fifteen days for guinea-pigs. The symptoms in rabbits in typical cases are described as stupor, tremors, epileptiform seizures and myoclonus of the extremities, and sometimes nystagmus. In monkeys, nystagmus, feebleness of motion and somnolence were observed, but no paralysis. When once the symptoms developed, the animals never recovered. The lesions produced in rabbits were confined to the central nervous system except for occasional hyperemia and hemorrhages in the lungs and liver. Many attempts at cultivating the virus from various tissues by the ordinary methods and by the Noguchi method failed, nor were any micro-organisms found in the brain or other tissues in stained preparations.

Levaditi and Harvier further found that the virus in emulsions of rabbit brain tissue would pass through Chamberland filters Nos. 1 and 3. Since four of six rabbits injected with filtrate contracted the disease, while all six controls became sick, it appears that filtration in some way reduced the activity of the virus. They have found also that the virus remains active after being placed in glycerol and kept at icebox temperature for nineteen days; further, that virus withstood drying for four days, but was killed by heating at 55 C. for one hour; it remained active, however, when left in the dead body for forty-eight hours at room temperature; it survived an exposure to 1 per cent. phenol (carbolic acid) for five minutes, but was killed by this phenol solution in three days. Rabbits may be infected also by injecting the virus into the anterior chamber of the eye, into the sheath of the sciatic nerve, into the testicle, or when applied to the abraded or inflamed nasal mucosa. The incubation period, however, was lengthened in such conditions, being as long as sixteen days when the virus was introduced into the eye; when injected into the testicle the virus remained active in one instance for seventeen days without producing any disease, but an intracerebral injection of an emulsion of this testicle into another rabbit caused death with typical lesions of encephalitis. Rabbits did not become infected when the virus was injected intracutaneously, subcutaneously, intravenously, intraperitoneally, or into the salivary glands, trachea or stomach. By inoculations it was found that in injected animals the virus may be present only in the brain and spinal cord, and not in the blood, spinal fluid, lung, kidney, spleen, liver, salivary gland, testicle, or the salivary and nasal secretions. It appears also from the experiments of these French investigators that a certain degree of immunity may be produced by subcutaneous injections of virulent brain emulsions because rabbits so treated were not susceptible to injections into the anterior chamber of the eye or to applications of the virus on the broken or inflamed nasal mucosa, but the serum of such partially immune rabbits had no protective action against intracerebral injections. The serum of monkeys and convalescent patients had no protective action for rabbits. There was no demonstrable serologic relation between epidemic poliomyelitis and epidemic encephalitis, that is to say, the immune serum of one disease had no protecting effect against the other in monkeys.

Loewe and Strauss [2] have reported that by the use of ascitic-tissue culture methods a minute filtrable organism may be grown from the brain, nasopharyngeal mucous membrane, nasopharyngeal washings, spinal fluid, and blood of cases in man and from the brain in experimentally infected rabbits; but Levaditi and Harvier were unable to corroborate these results, as all their cultural experiments gave negative results.

From the epidemiologic standpoint there has been much discussion concerning the relation between epidemic encephalitis in the United States in 1918-1919, and it is interesting to note that in 122 cases of encephalitis of which definite data were obtained and analyzed,[3] there was a history of influenza in 46 per cent., while the general attack rate of influenza was nearly 30 per cent. It has been suggested that influenza may reduce the resistance of the individual to the virus of epidemic encephalitis. Levaditi and Harvier observed that in rabbits abrasions or inflammatory conditions of the nasal mucosa may predispose to encephalitis, and perhaps influenza acts in the same manner. Altogether,

1. Levaditi, C., and Harvier, P.: Etude expérimentale de l'encephalite léthargique, Ann. de l'Inst. Pasteur **34**: 911, 1920.

2. Loewe, L., and Strauss, I.: Studies in Epidemic Encephalitis, J. Infect. Dis. **27**: 250 (Sept.) 1920.

3. Smith, H. F.: Pub. Health Rep. **36**: 207 (Feb. 11) 1921.

this work by Levaditi and Harvier, if corroborated, will prove a highly important contribution to the study of epidemic encephalitis, which perhaps is another disease that is transmitted by the secretions of the nasopharynx and in the spread of which mild and abortive cases and carriers play the most important part.

VARIABILITY IN CRUDE PRODUCTS CONTAINING ALKALOIDS

Few substances occupy a more important position in the therapeutic equipment of the physician than do the alkaloids. These compounds were first described as nitrogenous vegetable bases found in special parts of certain plants. For the most part, medicine is dependent on the plant structures for its supply of those alkaloids which are employed as remedial agents, only a few instances of successful chemical synthesis of the compounds in the laboratory being on record. Hence it is that the production of morphin, codein, strychnin and similar alkaloidal products still remains a problem of agriculture. Moreover, it is not only these isolated compounds with which the physician is concerned. The less refined mixtures represented by tinctures and extracts of various plant products, including opium and its derivatives, nux vomica and cinchona, still play an important part in the field of drugs.

The botanic aspects of the subject sometimes attain greater public prominence when the regularity of the supply of alkaloid products or their quality becomes subject to change, owing to altered possibilities of production or distribution. Thus, before the war the bulk of opium required for alkaloidal manufacture and for medicinal purposes was provided by Asia Minor, the Balkans and Persia. The morphin content of Indian opium was too low to enable it to compete in that market. With the entry of Turkey into the war, supplies of medical opium were threatened and it became imperative to make use of Indian opium. The question has therefore arisen as to why the content of morphin varies and how it may possibly be altered or better controlled.

A number of students of plant biochemistry have arrived at the conclusion that the alkaloids must be more or less accidental products of chemical change in the living structure in which they are found. It is generally supposed that they are formed by the decomposition of proteins. But, as Thatcher[1] has just pointed out, they are developed in only a few particular species of plants, and are always present in these plants in fairly constant quantities. Hence, it appears that in these species the production of alkaloids is in some way definitely connected with protein metabolism; but it is certain that this is not a common relationship, as it is manifested by such a limited number of species of plants, and there is absolutely no knowledge as to its character and functions. Some authorities prefer to regard the alkaloids as waste products of protein metabolism; but here, again, as Thatcher reminds us further, it is difficult to understand why such products should appear in certain species of plants and not in others.

Recent investigations by Annett[2] for the government of the United Provinces in India have led him to the conclusion that morphin in the opium poppy is a useless end-product of metabolism. The plant, having no mechanism for excreting an end-product of such complicated structure, stores it in places where it can do no harm to its own metabolism, i. e., chiefly in the capsule. The lactiferous system would seem to represent a means of removing waste products of metabolism. The evidence for these views is derived from observations on the variations in the composition of the latex, the milky juice that exudes when the plants are incised. When a capsule is lanced for the first time, the concentration of morphin in the latex is at a maximum in the first latex to flow out. As the flow continues, the morphin concentration diminishes. At each successive lancing, the morphin content of the opium obtained decreases rapidly; and, if sufficient successive incisions are made, latex can eventually be obtained which contains no morphin. The amount of morphin produced seems to be proportional to growth, whatever the race of poppy, the alkaloid being produced at the same rate as plant tissue. Morphin is thus represented as an excretory product. As Annett concludes, the animal organism takes in complex food materials, and excretes its end-products of metabolism, which are mainly of a simple structure. The plant, on the other hand, feeds on simple substances and therefore it is not surprising if some of its end-products are complex substances, which it finds difficult to excrete. Metabolism is a complex variable; hence the products of its reactions are likely to be varied quantitatively if not qualitatively. This helps to explain the importance of escaping from dependence on mixtures of changing composition as immediate remedial agents and of turning toward isolated, measurable products when definite therapeutic responses are desired.

EXPERIMENTAL RICKETS

One by one, many long familiar maladies have been investigated from the standpoint of possible dietary etiologic factors, and in consequence are likely to be placed sooner or later in the category of dietary deficiency diseases. Among them is rickets, a characteristic disorder for the genesis of which various hypotheses have been offered. A recent student of the literature of the subject remarked that rickets occupies a preeminent place among diseases whose etiology is surrounded by conjecture, and it is hardly an exaggeration

1. Thatcher, R. W.: The Chemistry of Plant Life, New York, 1921, p. 159.

2. Annett, H. E.: Factors Influencing Alkaloidal Content and Yield of Latex in the Opium Poppy (Papaver Somniferum), Biochem. J. 14: 618 (Oct.) 1920; the detailed account of Annett's important studies is published in the Memoirs of the Department of Agriculture in India.

to say that every specialist in children's diseases has his own hypothesis as to the causative factor of rickets. For example, it has been rated as a disease due to deficiency of fat, excess of carbohydrate, or both combined; again, a deficiency of calcium in the diet has been held responsible, although it is impossible to cure the condition by administration of lime salts alone or to initiate it by diets deficient only in respect to lime. Bone defects may occur under these circumstances, but the result is not one that pathologists recognize as true rachitis. The theory that defective hygienic conditions are the forerunners of rickets has been widely discussed. So far as these are associated with urban life they may involve confinement and lack of fresh air, and likewise dietetic factors connected with such domestication.

The special report to the British Medical Research Committee [1] has been widely quoted of late in reference to the subject at issue. It maintains that there is good evidence that rickets is a deficiency disease due to diets which are unbalanced in that they contain too little of those substances rich in antirachitic factor and too much of those substances deficient in this respect. The antirachitic factor has, in many respects, a similar distribution to the fat-soluble A factor, and is possibly identical with this substance. The observations of Mellanby, which form the experimental basis for much contained in the British report, are by no means entirely convincing, particularly because the distinctions which he found between rachitic and antirachitic foods are not always easy to interpret in terms of his own hypothesis. Consequently, the latter has not gone unchallenged. Hess,[2] for example, cannot believe that rickets is brought about merely by a deficiency in the vitamin A. However, McCollum and his associates [3] at the Johns Hopkins University have observed the gross picture of rickets in many animals restricted to faulty diets, and have demonstrated that this condition develops on diets in which the faults lie in several different factors. At first the Baltimore investigators were inclined to believe that a low content of fat-soluble A, low calcium content, poor quality of protein, and unsatisfactory salt mixtures acting in combinations may all contribute to the etiology of the disease. They felt confident that specific deficiency of vitamin A cannot be regarded as the sole and only possible cause of rickets. In the most recent investigations [4] in which Park and Shipley have collaborated, we are told that it is possible to say only that the etiologic factor is to be found in an improper dietetic regimen.

The large variety of dietary formulas the administration of which results in rickets and kindred affections gives abundant evidence of the complex nature of the causes operating in the production of the disease. One factor has been brought into clear relief by the most recent of these studies. They afford ocular and conclusive evidence of the specific beneficial effect of cod liver oil on rats suffering with experimental rachitis, in that some substance or substances in the oil cause calcium to be deposited in the same fashion in which deposition occurs in spontaneous healing of rachitis in man. Moreover, they prepare the way for the elaboration of a new test, which it is to be hoped may eventually prove even to be roughly quantitative, for the determination of the calcium-depositing potentiality of any substance in terms of cod liver oil units. It is interesting to note that calcium may be deposited in the cartilages following the initiation of the cod liver oil treatment in spite of the fact that in some cases the calcium intake was far below normal. Not without significance is the fact, first reported by Osborne and Mendel,[5] that cod liver is rich in vitamin A.

Current Comment

POSTENCEPHALITIC INSOMNIA

As our experience with epidemic encephalitis increases, we are realizing more and more that this dreaded inflammation of the brain is quite likely to leave serious sequelae. Permanent mental disturbances, disorders of vision and other injuries of the sensory or motor nervous systems are being reported. In addition to the recent reports of American observers, foreign medical literature contains frequent references to disturbances of sleep as a frequent sequel of this disease. Roasenda [6] describes the case of a man, aged 36, a mechanic, who, for eight months following convalescence from the acute attack of epidemic encephalitis, was unable to sleep at night. Extreme mental and motor restlessness occurred during the wakeful hours at night, and the man talked continuously in a loud voice, deploring his condition and relating family, business and other matters. There were no hallucinations, and at about 6 a. m. he fell into a quiet sleep until noon. Sedatives in normal doses acted for a night or two and then lost all efficacy. Several other patients, among them a child of 5 and a woman of 35, also presented such postencephalitic insomnia, but otherwise seemed normal. Rütimeyer [7] has reported similar experiences in a group of eight children at Zurich in Switzerland. Janecke [8] reports the case of a boy of 5 with postencephalitic inversion of the rhythm of sleep. After a

1. Report on the Present State of Knowledge Concerning Accessory Food Factors (Vitamines), Medical Research Committee, National Health Insurance, Special Report Series, No. 38, London, 1919.

2. Hess, A. F.: The Rôle of Fat-Soluble Vitamine in Human Nutrition and Its Suggested Relation to Rickets, J. Biol. Chem. **41**, 32 (March) 1920.

3. McCollum, E. V.; Simmonds, Nina, and Parsons, Helen T.: The Etiology of Rickets, J. Biol. Chem. **41**: 31 (March) 1920.

4. McCollum, E. V.; Simmonds, Nina; Parsons, H. T.; Shipley, P. G., and Park, E. A.: Studies on Experimental Rickets, I, The Production of Rachitis and Similar Diseases in the Rat by Deficient Diets, J. Biol. Chem. **45**: 333 (Jan.) 1921. Shipley, P. G.; Park, E. A.; McCollum, E. V.; Simmonds, Nina, and Parsons, H. T.: Studies on Experimental Rickets, II, The Effect of Cod Liver Oil Administered to Rats with Experimental Rickets, J. Biol. Chem. **45**: 343 (Jan.) 1921.

5. Osborne, T. B., and Mendel, L. B.: The Influence of Cod Liver Oil and Some Other Fats on Growth, J. Biol. Chem. **17**: 401 (April) 1914.

6. Roasenda, G.: Inversione del ritmo del sonno, con agitazione psico-motoria notturna (Sindrome post-encefalitica), Policlinico **28**: 181, 1921.

7. Rütimeyer, W.: Postencephalitische Schlafstörung, Schweiz. med. Wchnschr. **51**: 7 (Jan. 6) 1921; abstr. J. A. M. A. **76**: 621 (Feb. 26) 1921.

8. Janecke, Alida.: Fall von postencephalitischer Schlafstörung, Deutsch. med. Wchnschr. **46**: 1388, 1921.

night of restless agitation with singing and whistling, the child fell asleep about 5 a. m. This condition continued for about six months and was then treated with heliotherapy and general hygiene, followed by recovery. Janecke adds that the treatment must be regarded as proving effectual only by its tonic effects. Hufstadt [9] reports twenty-one cases of encephalitis in children from 2 to 13 years of age. Here, again, for weeks and months the patients who formerly had been normal were no longer able to sleep before 5 or 6 in the morning, presenting marked motor restlessness. He reports that the children went to bed at the usual hour, but instead of sleeping would toss from side to side, sit up, arrange the bed covers, beat and turn the pillows, lie down again, lie quiet for a few moments, and then again begin their restless tossing about. Some kept silent during their restlessness, whereas others talked, sang, whistled, prayed and shouted. The usual sedatives proved unavailing in ordinary doses. In some instances the condition lasted for several months. These cases indicate the subacute or chronic nature of the attack of encephalitis, and may be considered as evidence of localization of the infection in certain centers of the brain. The subject merits special investigation.

AN EXPLANATION OF SENSITIZATION IN INFANCY

It has been far from easy to account for the occurrence of those unique forms of hypersensitiveness to certain substances which are particularly striking in childhood, in which the opportunities for antigenic reactions may be assumed to be less frequent or varied than in later life when diet and environment are far more frequently changed. Reference of the result to "personal idiosyncrasy" can no longer receive the approval of scientifically minded persons. Idiosyncrasy has a cause perhaps more conspicuous than that of "normality" of physiologic behavior. Sensitiveness or the anaphylactic state presupposes the introduction of a specific sensitizing substance into the organism, from the standpoint of present-day investigations in immunology. However, the amounts of the substance necessary to sensitize the individual may apparently be so small as to help explain the existence of allergy under otherwise quantitatively unbelievable conditions. In guinea-pigs, which, it must be admitted, are peculiarly responsive, albumin sensitivity has been produced with one twenty-millionth gram, and fatal reactions are obtained after sensitization with one-millionth gram. With reactions of this order of magnitude, even the human person may become responsive to very small quantities of the foreign antigen. Admitting the potent possibilities of minute dosage, how does the antigen find access to the circulation in infancy? Whether or not sensitization can be accomplished by introduction of the antigen into the intestinal canal has been a matter of uncertainty.[10] Grulee and Bonar [11] of Chicago have investigated the permeability of the intestinal wall to foreign proteins by feeding egg-white solutions to infants at an early age. Precipitin tests with an anti-egg-white serum were then made on the urine. Positive reactions were obtained on the fourth day of life after giving quantities of albumin not exceeding 0.82 gm. for each kilogram of body weight in twenty-four hours. From their studies, the investigators conclude that the intestinal wall of the new-born infant from the fourth to the tenth day, inclusive, is permeable to small quantities of egg white which can be determined by the precipitin reaction in the urine. With these findings it would seem likely that this is not a reaction of specific cases but is a general characteristic of that period of life. The results suggest an explanation of sensitization to egg and other foreign albumin.

9. Hufstadt, F.: Eigenartige Form von Schlafstörung im Kindesalter als Spatschaden nach Encephalitis epidemica, München. med. Wchnschr. **67**: 1400, 1921.

10. For a discussion of the subject see Zinsser, H.: Infection and Resistance, New York, the Macmillan Company.

11. Grulee, C. G., and Bonar, B. E.: Precipitins to Egg White in the Urine of New-Born Infants, Am. J. Dis. Child. **21**: 89 (Jan.) 1921.

A MATTER OF DRESS

In matters of dress, masculine and feminine psychology have frequently run on divergent tracks. Many of us of the sterner sex have often wondered how femininity survived arctic conditions while attending midwinter festivities clad in decolleté gowns, filmy stockings and charmingly and absurdly inadequate slippers. Nietzsche says, "No woman who felt herself well-dressed has ever caught a cold, even when she had next to nothing on, *en costume de bal.*" Securely intrenched in the fortress of the *Paris médical,* Dr. G. Milian voices some of the perplexity which surges at times in every male breast over the charming inconsistencies of feminine array—or disarray—to judge by the context of his plaint:

> Before the beginning of the war, feminine fashion decreed the establishment of a hiatus in the waist of the dress which took the form of an isosceles triangle with the base at the neck.

And note the careful observation of the trained man of science:

> This had a base of 15 centimeters and an altitude of 25, and thereby exposed to the light of day and the gaze of the interested observer 167.50 square centimeters of surface which had hitherto been preserved from any such contingency.

As a clinical result of this custom which winter seemed to aggravate rather than diminish, he cites the fact that French dermatologists were at once called on to treat a Brocq dermatitis, mediothoracic in anatomic location, which varied in intensity from a faint rose pink to a hue so deep that neither rice powder nor cosmetics had any remedial effect. With the advent of war, those of the fair sex who garbed themselves as *infirmières* abandoned this custom. Milian insinuates that the reform was due to the lynx eyed watchfulness of the chief nurses and a justifiable apprehension as to what the effect of this policy of the open door might have on the war. worn poilu of the zone of the advance. However, even while he admits an advance, or regression, in this matter of attire so far as the nursing element was concerned, he pessimistically shows that there was a direct ratio of effect of this reform at the front, and that as the bodice of the nurse crept up to impinge on the symphysis menti, the result as to femininity in the zone

of the interior was a rapid increase in the length of the legs of the triangle. With the increase of the triangle, the question passed from a computation of square surface and the figures of half the base by the altitude to one involving the principles of spherical geometry. Milian dwells on the shoulder straps which support this diminishing "confection" and, manlike, refers to them as suspenders (*brételles*). Owing to the increasing scantiness of the bodice, one string of pearls is altogether insufficient, and a triple row or even a dog collar is requisite, thus giving my lady the appearance of one of the most famous aviators liberally bedecked with *fourragères*. In spite of Dr. Milian's raillery as to feminine foibles, it is entirely probable that he finds the gentler sex altogether charming and adorable. He sums up his statement by the French equivalent of "Well, you know how women are."

Association News

THE BOSTON SESSION

Assistance in Securing Hotel Reservations

The Committee on Hotels, Dr. John T. Bottomley, Chairman, 8 The Fenway, Boston 17, Mass., will gladly assist in securing hotel accommodations at Boston. Applications should be made on the form which was printed in THE JOURNAL for March 19, advertising page 29.

Time for Purchase of Railroad Tickets Extended

The Trunk Line Association and the Central Passenger Association have extended the time for the purchase of round trip tickets to Boston within their territories so that these tickets may be purchased June 1-5, inclusive. They may be validated for the return trip at Boston, June 3-11, inclusive, instead of the dates previously announced. These two associations serve most of the territory east of a line drawn from Chicago to St. Louis and north of the Ohio and Potomac rivers to the New England states. The special rate for the round trip ticket announced is one and one-half fares from the place of purchase to the gateway into the New England Passenger Association territory plus a double one-way fare from that gateway to Boston.

Stamped, addressed envelops should be mailed, by members who desire to take advantage of this special railroad fare, to the Secretary of the Association, Dr. Alexander R. Craig, 535 North Dearborn Street, Chicago, with requests for identification certificates. These requests will not be acknowledged, but will be given attention as soon as the certificates are available.

GRANTS FOR RESEARCH IN THERAPEUTICS

The Committee on Therapeutic Research of the Council on Pharmacy and Chemistry will consider applications for grants to assist research in subjects which, in the opinion of the committee, are of practical interest to the medical profession, and which research might not otherwise be carried out because of lack of funds.

Applications should be addressed to: Chairman, Therapeutic Research Committee, Council on Pharmacy and Chemistry, 535 North Dearborn Street, Chicago, Illinois.

Requests should state the specific problem which is to be studied, the qualifications of the investigator, the facilities available to him, and, if work is to be undertaken in an established research institution, the name of the individual who will have general supervision. The committee will also appreciate offers from research workers to undertake investigations of questions which may be suggested by the Council.

ANNUAL CONFERENCE ON MEDICAL EDUCATION AND HOSPITALS, LICENSURE AND PUBLIC HEALTH

(Continued from page 873)

THE FEDERATION OF STATE MEDICAL BOARDS OF THE UNITED STATES

Annual Meeting, held in Chicago, March 9, 1921

Medical Examinations and Licensure

DR. DAVID A. STRICKLER, President of the Federation, Denver: In Colorado under the initiative and referendum we have had different opportunities to test the attitude of the people on the same line of argument. Our contention is that no one should be licensed to practice the healing art who cannot show knowledge of disease in its common forms; that no one should be permitted to treat communicable or contagious diseases who has not shown to the state reasonable ability to recognize the same; that the only logical reason for licensure to practice the healing art is that public health may be conserved and not endangered thereby. In 1916, the medical practice act, which had been passed by the legislature in 1915, was referred to a vote of the people. It was carried by a vote of 96,879 to 82,317. In November, 1920, an initiated chiropractic bill which provided for a separate chiropractic board which should examine in anatomy, physiology, symptomatology, sanitary science, etc., and which granted the licentiate all the privileges accorded physicians and surgeons except the right to give medicine, to perform surgical operations or to attend obstetric cases, was defeated by a vote of 109,385 to 84,286. The vote in both instances was favorable to our contention by majorities which were uncomfortably small. It is a notorious fact that in all states it is exceedingly difficult to have a jury finding against a drugless healer unless a layman testifies to personal injury from his treatment. The chiropractor, with his well organized and highly financed national, state and local bodies, is present as lobbyist in large forces in season and out of season to convince the unsophisticated legislator of his superiority in all matters relating to the care of the sick, even his greater ability to examine in the science of anatomy, physiology, symptomatology, etc., because of his better methods of teaching and extraordinary judgment in general. Assuming it to be conceded that the public should be properly educated in the physical betterment of the race, in public health and preventive medicine, how shall we proceed to accomplish it? First, we suggest that it begin in the public schools to the end that no student shall graduate from high school without an intelligent conception of personal hygiene, of modes of transmission of communicable and infectious diseases, and the general means for their prevention. This should be supplemented by a well organized campaign for education of the masses on like subjects through the daily and weekly press; by suitable moving pictures designed for educational purposes; by suitable articles in the popular magazines and periodicals; by the establishment of public health journals for popular consumption, and by such other means as may from time to time be deemed best by such organizations as may be created for the purpose.

Medical Education and Licensure in the United States as Viewed by European Visitors

DR. WALTER L. BIERRING, Des Moines, Iowa: The visiting commission that came to this country last April and May under the auspices of the National Board of Medical Examiners was representative of such interests in their own country as would enable them to draw comparisons of special value and import regarding the problems of medical education, qualification and licensure, particularly concerning the United States at this time. Their impressions and views may be given in abstract under the three main headings: 1. Comments on methods of instruction. 2. Qualifying examinations and licensure procedure. 3. Teaching hospitals and graduate medical education. They emphasize the intensive ordeal that examination means to the candidates as well as the examiners, and advise that it be divided into three parts along the line of the British examination. The written

grades should be completed before the practical tests are taken up, and they further favor the English custom of two examiners for each oral examination, one to examine, and the other to assess. They find it difficult to reconcile themselves to the rather high passing or average grade of 75 per cent. required generally in this country for qualifying examinations, as compared with the 50 per cent. passing mark of the English examinations. The French members acknowledge the comprehensive character of the examinations and admit that there is nothing to compare with it in France, but they are inclined to judge the examination as a criterion of medical training in this country.

In analyzing the answers, they are struck by their uniformity, even though the candidates came from different medical schools; furthermore, "the answers indicate that the teaching is not only for the 'elite' but for the average student as well. At these tests we were very much struck by the fact that although few brilliant scholars are met with, the great majority of candidates came up to the average and showed sufficient knowledge to make good practitioners." Again, in clinical diagnosis, they were impressed by the emphasis given to laboratory tests which seemed to indicate the tendency to regard clinical conditions largely from the laboratory point of view at the sacrifice of clinical observation and description of disease conditions. They give as examples: 1. In the diagnosis of syphilis greater stress is given to lumbar puncture, examinations of cerebrospinal fluid, and the Wassermann reaction than to the well known clinical signs that are classic criteria of the disease. 2. In the recognition of acute nephritis complicating scarlet fever, much more import was given to the chemical and microscopic examination of urine and leukocytosis than to the fever, facial edema and diminished secretion of urine which often permit a bedside diagnosis.

The Development of a Model Qualifying Examination by the National Board of Medical Examiners

DR. HORACE D. ARNOLD, Member of the National Board of Medical Examiners, Boston: The first examination by the National Board was held in October, 1916. The essential success of this movement is shown by the wide recognition of its certificate at the present time. The certificate is officially accepted in lieu of a professional examination by the medical examining boards of twenty states; it is practically so recognized in twelve other states whose examining boards are legally required to give some form of examination themselves; and in still other states the worth of the certificate is recognized by the state boards, although technicalities of the statutes prevent official recognition at present. It is accepted as equivalent to the professional examination for the service by the Army, the Navy and the Public Health Service. It is accepted as qualification for admission to the Graduate School of the University of Minnesota, including the Mayo Foundation. And the Royal College of Physicians of London, the Royal College of Surgeons of England, and the Triplicate Examining Board of Scotland, after careful investigation by their representatives a year ago, have extended to the holders of the certificate of the National Board the highest recognition that they can give legally, namely, admission to the final, practical examinations given by these bodies. Such recognition is gratifying. It seems reasonable to expect that in the very near future the certificate will be practically recognized by all state boards in the United States. But the National Board is not yet fully satisfied with its examination and will shortly inaugurate changes which it expects will make the examination even better.

One of the chief reasons for change is the desire to extend to all well trained graduates in medicine in this country the opportunity to take this examination if they are eligible. To accomplish this, associates and assistant examiners must be appointed at various centers throughout the country, and these will constitute subsidiary examining boards. The National Board itself will become essentially a supervising body of examiners. It must exercise such control over the examinations as will assure essential uniformity in the examination of candidates, and the maintenance of the high standards that have prevailed under personal examination by members of the board.

Under the new plan the examination will be divided into three parts. Part 1 will consist of a written examination in each of the six fundamental medical sciences—anatomy, physiology, physiologic chemistry, general pathology, bacteriology and materia medica and pharmacology. The board reserves the right to require also a laboratory examination in any of these subjects, if not fully satisfied as to the thoroughness of the laboratory training the candidate has had. Part 2 will consist of a written examination in each of the four clinical subjects: medicine, surgery, obstetrics and gynecology and public health. Part 3 will consist of thorough clinical examinations in the four subjects of Part 2.

There is one other important change. During these five years of experiment and study by the National Board, the Carnegie Corporation has generously furnished the necessary funds. It has been necessary to require only a nominal fee of $5 from the candidate for registration. It is unreasonable to expect the Carnegie Corporation to continue its support indefinitely, or to bear the increased expense involved in the wide extension of the examinations. The plan must therefore be put on a self-supporting basis. This, in the judgment of the board, will require a total fee of $100 for the complete examination. It will be thus divided: $25 for the written examinations of Part 1; $25 for Part 2, and $50 for the practical examinations of Part 3. We shall need the hearty cooperation of the faculties of the medical schools in stimulating the interest of their students during the next year or two, otherwise the movement inaugurated by the National Board may come to grief on financial reefs. We shall need a helpful and sympathetic attitude by the state boards. We believe that all will willingly cooperate to make this movement—so important in fixing good standards and in stimulating better medical education—a success.

Education of the Public Regarding the Problems of Medical Licensure

MR. GEORGE W. WHITESIDE, counsel for the New York State Medical Society, New York: The public evinces only mild interest in the finished product of medical education and less in the training and tests that the licentiate undergoes before he is permitted by the state to practice his profession. I have been told, when engaged in the prosecution of chiropractors whom I knew from investigation were ignorant men of small mental capacity, that they had among their patients people of refinement, education and professional and social position in the community. I have been told by the courts before whom I have appeared in the prosecution of such practitioners that people of high station in professional life in the city had written letters of commendation of such practitioners to the court before which they had been convicted. In a recent instance I learned that a chiropractor who had quit common school at the age of 12 years, had been a cabaret singer and habitué of the white light district of Broadway, and after a twelve months' course in an unauthorized and unrecognized so-called school of chiropractic, was openly advertising himself as a doctor of chiropractic and undertaking chiropractic adjustments in cases of serious human diseases. These unauthorized and poorly equipped schools appeal to an unthinking and uneducated class of the community. One of their potent arguments in the obtaining of students is that the course is a short one, that no preliminary educational standard is needed, that a clerk, a bookkeeper or a man in any other walk of life whose income is meager can make from $5,000 to $10,000 a year by practicing chiropractic. The appeal is made to man's cupidity and results in a great influx of students of very low mental grade.

Under our present laws the establishment of these standards and the adherence to them by the medical practitioner afford inadequate protection to the public unless the standards are similarly applied to all who engage in the healing art, and those standards established for all practitioners must be strictly enforced as to all. The main problem of medical licensure which now confronts the profession is one that depends for its solution on a public education of the underlying reason for and public importance of medical licensure and the dangers to public health that are sure to follow public indifference to this problem. A campaign of public education on this matter is not an activity for which the medical man's

scientific training appropriately fits him. The presentation of facts in such manner as to grip the public interest and to arouse a public conviction is a profession in itself. To undertake a proper campaign of public education on the matter of the problems of medical licensure would require the use of experts who have been trained in publicity work. During the war the government recognized the necessity of the use of such agents and employed them to advantage. While the medical profession has been inactive in this method of educating the public, the propagandists of various cults and healers have developed publicity organizations with little regard to the financial cost and less respect for the truth of their claims. In addition to public indifference to the importance of the maintenance of adequate standards for licensure in those practicing the healing art, we have the destructive force of propaganda carried on for the purpose of undermining and destroying public confidence in the medical profession. The medical profession has not sufficiently answered these false claims, has not rebutted these absurd contentions, has not exposed the fallacy and fraud that lurk in them; it has rather been content to rest and rely on the ultimate recognition by the public of the truth. The results of such investigations as have been made under the auspices of medical organizations have not been adequately brought before the public. Such confidence and faith in the public are well founded, provided the public is given facts, in properly digestible form, which will support a conviction of truth.

But there should be, in my judgment, an adequate means of expressing the congregated judgment of the medical profession to the public on all matters concerning which the public seeks information from the profession. The fundamental truths on which all scientific men must agree can and should be presented to the public with convincing force. The lying propaganda should be answered and exposed, and for this purpose systematic and persistent discussions of medical truths, ideals and problems in the public forum and the lay press should be undertaken.

The Chiropractic Problem

DR. CHARLES B. PINKHAM, Secretary, Board of Medical Examiners State of California, Sacramento, Calif.: A chiropractic wave is sweeping over the country, carried by organized publicity, propagated by both the schools and graduates of chiropractic, centralizing their forces on convincing the public that chiropractic is an exact science; that the origin of all disease is pressure on the spinal nerves as they emerge from the vertebral foramina; that a knowledge of the chiropractic chart showing disease or physical disability alleged to be controlled by designated spinal nerves is practically the only essential professional education; that treatment directed thereto will cure every ill to which flesh is heir; that a course at a chiropractic school is all sufficient to qualify one to treat the public; that the examining boards are state representatives of a visionary octopus called the "Medical Trust," which seeks to crush all save the licensed physician and surgeon, who, the chiropractic claims, is selfishly protecting his own financial interests from the competition of the chiropractor, who boasts that he is gradually taking from the doctor of medicine his clientele.

Chiropractic schools of mushroom growth have sprung up all over the country, privately owned and supported by the fees accrued from student enrollment. Pause to estimate the income of the Palmer School, with an enrollment of more than 2,000 at a minimum of $300 per capita: practically an annual income of $600,000 from student fees alone. The majority of chiropractic schools augment their income from fees by collecting in advance a monthly fee of $5 for treatment in the clinic of the school and thereby obtain material whereon the students may practice the various adjustments and learn the technic. The advertised common school requirement exacted of the matriculant in chiropractic colleges must not be taken too seriously. The prospective student is not required to furnish even a grammar school diploma. A statement is made by the president of one of the well known eastern chiropractic schools that the only education necessary is the ability to read and write. The better class of chiropractic schools announce that a three-year course is required to earn the degree of Philosopher of Chiropractic. Their graduates glory in availing themselves of every opportunity to boast of their three years' education, a palpable deception in that they fail to mention that six months constitute a chiropractic year. The boast of a three years' education is frequently made by chiropractors in an endeavor to convince the public in a state maintaining a reasonable educational standard that the board of medical examiners is biased in denying the right of examination to chiropractors or others who fail to meet the statutory educational standards. The equipment of the average chiropractic school is pathetically meager, particularly in the laboratory branches.

Will an aggressive campaign of prosecution gradually drive out the violators by either forcing compliance with the law or, by means of some penalty imposed, drive the violator from the state? Our experience in California convinces us that the situation cannot be successfully handled along this line, and for two reasons: 1. The product of the chiropractic institutions, schooled to defy the law and denounce all regulations except by a chiropractic board, is multiplying to such a voluminous extent that to attempt to eradicate these violators is about as effective as commanding the waves of the sea to cease to roll. 2. An active campaign of prosecution in an attempt to compel respect for law invariably results in arousing public sentiment in the conviction that the medical board is waging a war of persecution. The chiropractor is fully alive to the psychology of the masses. He fully realizes the infinite value to his cause if well directed publicity is given each arrest and prosecution of a chiropractor. That this impression may be stronger, the chiropractor is urged to affiliate immediately with fraternal, religious, social and civic organizations as soon as he locates in a town so that he may arouse a commanding interest from diversified sources should he be arrested for violating the law.

As the chiropractor educates the public, so should the medical profession educate the masses that they may have a clearer perception of the effect of disease, the cause of disease and the prevention of disease. This campaign of education should convince the public that an individual untrained in the diagnosis of communicable disease is a serious public menace. National, state and municipal organizations should join, waging the campaign comprehensively, intensively and unceasingly. Newspapers and lay magazines should be utilized in convincing the public that: (1) a minimum standard of education should be required of every one who seeks the authority of the state to practice any system of the healing art. 2. Chiropractic nomenclature must be changed so that (*a*) the hour of instruction will be at least fifty-three minutes and not as now, but thirty minutes; (*b*) the year of instruction will conform to that of modern education, which cannot concede that three years of education can be completed in eighteen months' continuous work.

DISCUSSION

DR. JAMES EWING, New York: If I understood Dr. Arnold correctly, I regret to learn that the National Board of Medical Examiners has decided not to admit any one to examinations who has not had the fifth clinical year. In the state of New York the requirement of the fifth clinical year in institutions under the direct control of the universities is dead and will not be revived until the universities request a fifth clinical year in such institutions. The requirement of this fifth clinical year by the National Board cuts off a group of men who are going into the scientific branches and are desirous of becoming teachers of medicine. The fee of $100 is an additional obstacle in securing that group of scientific men who would likely take the examination.

DR. JOHN M. DODSON, Chicago: I should like to make a plea for an enlargement of the requirement of the intern year. I think it most important that an alternative be offered. In 1905 the institution with which I am connected (Rush Medical College) first offered a fifth year which was for the time being optional. We made these two alternatives, that the year should be a year of intern service in an approved hospital under the supervision of the faculty, or a year of advanced research work in a college as a fellow or an advanced student. I think we can find a satisfactory solution if we adopt the modification which we have adopted in order to meet some of the requirements of state boards, namely,

that this should be a year of advanced research work in one department of the college, including clinical training. For instance, take physiology. The student should come in actual contact with clinical material in relation to physiology and clinical medicine at the same time. We have small groups of exceptional students for whom we cannot secure internships. Some years ago there was a time when it was difficult to find internships for graduates. That has not been the trouble for the last two or three years. However, we find that proposition always and we must have some alternative to offer such a student as that other than actual internship in a hospital. More important still, we must not cut off the supply for the teaching of these fundamental branches.

DR. HORACE D. ARNOLD, Boston: The National Board recognizes an extra year in an approved laboratory. It is not limited to the one year, and it is for the purpose of recognizing men of the type mentioned we have used the word approved laboratory which is interpreted by the board.

DR. WALTER P. BOWERS, Clinton, Mass.: As we interpret the functions of the National Board, it requires of recent graduates the demonstration of a knowledge of the basic subjects in medicine. If I understood Dr. Arnold's report, the National Board's examination in anatomy is a written one. The Massachusetts board has felt that the anatomy examination should be a practical one. We all feel that the older men should not be required to pass these practical examinations.

DR. DODSON: It is contemplated, I take it, to utilize the services of those engaged in teaching these subjects in examinations, provided they do not examine their own students.

DR. ARNOLD: Yes, the point raised by Dr. Bowers in regard to practical examinations in anatomy is one which concerns not only anatomy, but also practical examinations in the fundamental medical sciences, laboratory work, etc. The National Board has discussed this matter very thoroughly. A man is not eligible for examination unless he comes from a Class A medical school. The problem of giving a practical examination to everybody who is eligible for this degree seems not only impossible but to a large extent entirely unnecessary. We shall require evidence that the candidate has successfully passed in these subjects in a Class A medical school.

DR. T. A. MCCANN, Dayton, Ohio: It seems to me that the Federation of State Medical Boards ought to select the men who are to be members of the National Board of Medical Examiners and to define the policies to which we are to be subjected. I myself would not listen to any one who was selected in any other way.

DR. WALTER L. BIERRING, Des Moines, Iowa: I should like to call the attention of the gentleman from Ohio to the fact that most of the forward movements in medicine in the last two years have been accomplished by voluntary bodies. The Federation of State Medical Boards is one of these. The matter of placing it on an incorporated basis has been discussed, but was referred at last evening's meeting for subsequent discussion. Furthermore, the National Board of Medical Examiners has in its constitution a clause which says that there shall always be three representatives from the Federation of State Medical Boards recommended by that organization. At a meeting in 1917 of the Federation of State Medical Boards, the National Board of Medical Examiners was endorsed in principle and given every assurance of support and encouragement.

CONFERENCE ON HOSPITAL SERVICE

Held in Chicago, March 9, 1921

Policy of the American Conference on Hospital Service

DR. FRANK BILLINGS, President of the American Conference on Hospital Service, Chicago: In this congress the subject of hospitals is placed under the jurisdiction of the American Conference on Hospital Service. The American Conference on Hospital Service is an organization which met in the fall of 1919, and its complete organization was not perfected until the early part of 1920. The object of this organization was to secure membership in it of all the national organizations which are working for the betterment of hospitals and of hospital service, its purpose being to bring about coordination of effort of all agencies that are willing to join in this conference in this work.

It is understood also that the policy of this annual so-called midwinter conference in the future will leave the subject of discussion of hospitals under the jurisdiction of the American Conference on Hospital Service, so that at each congress held hereafter the subject of hospitals and of all the related subjects to hospitals will come under a program prepared by the American Conference on Hospital Service.

At present the constituent organizations are the American Association of Hospital Social Workers, the American Hospital Association, American Association of Industrial Physicians and Surgeons, the American Medical Association, the American Nurses Association, the Association of American Medical Colleges, the Catholic Hospital Association of the United States and Canada, the Federation of State Medical Boards of the United States, the Medical Department of the United States Army, the Bureau of Medicine of the United States Navy, the United States Public Health Service, and during the year there have been added the National Organization of Public Health Nursing, the National League of Nursing Education, the American Dietetic Association, and the National Tuberculosis Association, Inc., making fifteen constituent organizations.

I want to state some policies which the conference has adopted. The first policy is the library, which has been in existence about six months. The second policy is hospital standardization, and in regard to hospital standardization the conference has endorsed the minimum standards of the American College of Surgeons as a beginning. As a proof of that, it has expressed its willingness that should the occasion arise it will enter into negotiations with the American College of Surgeons to take over its field of work if it so desires. As a part of the hospital standardization policy it will formulate additional standards, applicable respectively to follow-up, one of the most needed things after a hospital has been inspected; also the application of statistical reports to clinical work of accounting, of nursing, and the like. Its third policy is to cooperate with a committee named by the Rockefeller Foundation in the training of hospital executives. Its fourth policy is to develop higher medical standards and an efficient community medical service through postgraduate teaching. In this effort it will support the further development of intern standards in the work of the American Medical Association. It will promote the fifth or intern year as a prerequisite for independent practice. It will encourage systematic teaching of graduates at hospital centers or at diagnostic centers. It will promote plans for the establishment of closer relations between practitioners and well equipped diagnostic centers.

Adequate Medical Service for the Community: Some Factors of Importance

DR. WINFRED H. SMITH, Director, Johns Hopkins Hospital, Baltimore, read a paper on this subject which will be published in THE JOURNAL.

American Conference on Hospital Service

MR. GEORGE E. VINCENT, President of the Rockefeller Foundation, New York: The hospital is a great social institution, a center radiating into all centers, influencing the community, and regulating it in all sorts of ways. Its relation to medical education, to other hospitals, to the hospital superintendent, to the training of nurses and to the whole range of preventive medicine is interesting and appealing. What are we going to do about it? We have got to have cooperative effort. We have got to raise our standards and ideals, not all at once but slowly. The picture has to be made more public and fascinating. The boards of hospitals have got to be convinced and all kinds of people have to be convinced and the public must be convinced, that the standards we have created are right, but that makes it all the more interesting, that makes it a challenge.

If I understand this hospital conference and the bureau which has been organized and the service to be given, it is just an agency of cooperation. You notice how careful they are at the beginning as to the facts that will be presented to you.

You are not to be given advice but to be given facts, and these facts should be presented in such a way that the inference from them is unescapable, if your minds are working normally. But that is very different from giving advice. It is giving you information on which you as rational beings will base your decision, and then little by little, as you get confidence and enthusiasm, the improvement of hospitals will be demonstrated to you and administered to you, as is sometimes done, in increasing doses, and the advice will take on a more and more convincing character. It will not be mandatory or coercive; it will be convincing, and then the various services will be extended. If a hospital becomes a center of research and comradeship, it is a different place, but it will take some time to bring this about. It will come slowly. If I understand the object of this conference and its bureau of service, it is to help in building up the picture, enlarging it year after year, and changing it as conditions demand, and that can be done only slowly and with some little misunderstanding; and yet our experience goes to show how we can correct these misunderstandings if we have the good will of the people, if we are open minded enough to listen to the other point of view. Work in connection with the upbuilding of hospitals means cooperative effort; it means team play, and the experience of putting into execution such ideas as have been presented.

DR. RAY LYMAN WILBUR, President, Leland Stanford Junior University: We are more or less a self-admiration society in working on these hospital problems, and yet the solution of them will depend on the people. We must have a very definite campaign of education in which the hospital must be the center. Take, for instance, the elements that make education in a community. After school a man gets his education from his business, his occupation, sometimes from his friends, and from the newspapers. We are handicapped in newspaper education in regard, for instance, to public health. It is true that occasionally we find a newspaper with sound ideas and sound men giving health instruction; but for generations the newspaper was more helpful to the quacks than to anybody else, and we still can find newspapers filled with "patent medicine" advertisements and all that sort of thing. The chiropractors have large control over newspaper columns because they advertise freely and spend much money by so doing. We have a definite handicap to meet when it comes to the newspaper. The health problem is a serious one, a vital thing, and we have to make our articles and talks interesting to the public. There are a few educated people who will listen to things going on around them; they have good judgment, but a very large proportion of our people have the same attitude that people had two or three thousand years ago toward medicine. The best center for education of the whole public is the hospital. The hospital can compete with the quack and the "patent medicine" man who advertises in newspapers, but it cannot do so unless the people consider themselves as members of the hospital staff, as instruments of public education. We must use ingenuity to achieve success in the handling of these problems. We must make our talks, our writings, forceful and interesting, so that we can train the younger men to help us in the development of our health problems.

FATHER CHARLES B. MOULINIER, Milwaukee: No hospital can be anything unless it is organized, unless it has records, and the organization will not amount to anything unless there are monthly meetings for discussing the work that has gone on in the hospital for every patient during the last month. The records will not amount to anything unless they are kept effectively, truly and scientifically, up to the last minute. A record means taking everything that has been done for a patient previous to operation and after it and what follows. Medicine will go on increasing from year to year in its fundamental and scientific knowledge and in its application. Organization must be there, laboratories must grow according to the growth of medical knowledge, records must go on, and you must acquire the ethical spirit and soul of the medical profession if you want your men to be right minded and scientific.

DR. ARTHUR DEAN BEVAN, Chicago: I should like to say a word from the standpoint of one of the associations that goes to make up this conference in regard to what I believe are the possibilities for good that may come from the work of the American Medical Association, which is only one, I believe, of a dozen constituent members of this conference. The American Medical Association represents in a certain large way the organized medical profession of this country, and I think it can be of great service in this hospital movement if it will seriously realize its duties and its responsibilities. To put this whole subject in the simplest possible way, I think the bringing of the benefits of medicine to the people requires three things: It requires educated medical men; it requires properly equipped medical plants or hospitals, and it requires a plan of organization that will make an efficient and effective scheme of work, so that these medical men with the articulating plants can bring the benefits of preventive medicine to the people, because I think these hospitals should be health centers in bringing curative medicine to the community.

My experience in the work of the Council on Medical Education and of Hospitals of the American Medical Association makes me believe that we require nothing in the way of laws; that we require no change in our organization, but that we do require as one of the elements back of this movement the active, enthusiastic support of the medical profession. How is that to be obtained? Up to this time I do not believe that the medical profession has realized the importance of its work in each of its county societies and of the state society in taking hold of this matter in an efficient way. If the medical profession in every county realized that it was its most important function to help the people in that particular community secure proper medical care, much good could be accomplished, and one of the essential things it must see to in such a community is a proper medical plant or hospital to take care of the sick, and as a health center. I think we must preach that to this particular constituent element of this hospital conference. We must make every county society realize that its most important function is not to read papers and to meet occasionally, but to bring the particular benefits of medicine to the people and to provide an intelligent plan and see that it is carried out for that purpose. This should be done by every state society.

I think that the American Medical Association at its next meeting in Boston should take up this matter through its House of Delegates. I think that the great instrument by which we educate our profession—THE JOURNAL—should be made to see the importance of bringing this matter before every single medical man in the country. We have pretty nearly 100,000 physicians who read THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, and this journal is the effective instrument by which we could bring exactly this sort of thing to the attention of the medical profession. I am presenting this as a business proposition, as a working plan, as a concrete thing we ought to do. There are other agencies that could do an enormous amount of good in connection with this movement, but I do not believe there is any agency that could be of more service than the American Medical Association through its county and state societies. Every medical man should make it his business to emphasize its importance and see that it is carried out in his own community.

DR. F. E. SAMPSON, Creston, Iowa: As a physician I have been impressed with this point, that if our medical organizations would take the same interest in the social side of our medical problems that social organizations today are taking in the medical side of social problems, our health centers would become a matter of course.

DR. GEORGE M. KOBER, Washington, D. C.: I wish to emphasize the importance of prenatal clinics and infant welfare stations in connection with our hospitals, as I believe they will be of inestimable value in convincing the public at large that we are not only interested in the care and treatment of the sick and wounded, but that we are also doing our share in the prevention of sickness. I cannot conceive of a more important function than that of seeing to it that a nation will have a right start, beginning with prenatal care, and also looking after infant welfare. When the principles of personal hygiene are inculcated in the minds of the mothers, they become strongly attached to the institution and will carry out in a religious way the teaching they receive.

(To be continued)

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ARIZONA

Reciprocity in Arizona.—During the recent session of the legislature an amendment to the medical practice act was passed, which permits the granting of reciprocity certificates. The measure becomes effective, June 10, 1921.

ARKANSAS

Clean-Up Weeks.—In response to the request of the principal of Tuskegee Institute, Dr. Charles W. Garrison, state health officer, is arranging to cooperate in the national negro health week, April 3-9, inclusive.——The governor has proclaimed April 11-18 as clean-up week in the state.

Campaign Against Cancer.—The Hot Springs County Medical Society has appointed a county control committee in response to the request of Dr. Dewell Gann, Jr., chairman, state cancer control committee. Dr. Gann announces that literature will be sent any one making request to the Arkansas State Cancer Control Committee headquarters, Little Rock.

CALIFORNIA

Chiropractic Bill Killed.—It is reported that the bill to establish a separate board of chiropractic examiners was "killed" by a vote of 29 to 42 in the assembly of the California legislature, March 16.

Personal.—Surg. John D. Long, who for the last two years has been supervisor of the U. S. Public Health Service in San Francisco, has been transferred to the office of Surg.-Gen. Hugh S. Cumming, Washington, D. C.

License Certificate Lost.—It is reported that Dr. John M. Tufts, a graduate of Leland Stanford Junior University Medical School, June 21, 1920, has lost the certificate issued to him by the California Board of Medical Examiners. The certificate is No. A0-2893, issued Aug. 19, 1920. Other licensing boards are warned to be on the lookout for this certificate, which may be presented by one not having authority to use it.

Physician Convicted of Murder.—The conviction of Dr. Frank Thomas, San Francisco, of the murder of Miss Rose M. White, Vallejo, in November, 1919, has been affirmed by the district court of appeals. Dr. Thomas was charged with performing an illegal operation, from the effect of which the girl died. He was found guilty of second degree murder, from which judgment and an order denying his motion for new trial, Dr. Thomas appealed. It is reported that this is the fourth time he has been brought into the courts of San Francisco on similar accusations. He was given an indeterminate sentence of not less than ten years.

DISTRICT OF COLUMBIA

Personal.—On March 1, Dr. Edward A. Spitzka, New York, assumed his new duties in the neuropsychiatric section, medical division, War Risk Insurance Bureau, Washington.

Law to Control Venereal Disease.—At a meeting held in Washington, under the auspices of the Social Hygiene Society, Dr. William C. Fowler, health officer, urged the support of a bill designed to control venereal disease to be introduced in Congress during the extra session, and stated that only one state and the District of Columbia have failed to pass a law controlling venereal disease.

FLORIDA

Healthsport Sanatorium.—Four thousand acres of land within 3 miles of Jacksonville, on waterways having sufficient depth and docking facilities to accommodate yachts of all sizes which come to Florida every year, has been secured as a site for the erection of a sanatorium to be known as Healthsport Sanatorium. The plan was conceived by a group of physicians in the North and East.

ILLINOIS

Personal.—Dr. Samuel N. Clark, Chicago, associate, division of neurology and psychiatry, University of Illinois, also clinical psychiatrist, Illinois State Psychopathic Institute, has been appointed psychiatrist to the Norbury Sanatorium, Jacksonville.

Full-Time Medical Health Officers.—Believing that the county is the logical and most practical unit around which local public health administration can be effectively established, the state department of public health has prepared, and will cause to be introduced into the legislature during the present session, a bill providing for the employment of full-time medical health officers by every county in the state. According to reports, a number of counties have already taken the initial steps for a full-time health officer.

Survey of Health Centers.—A recent state-wide survey shows forty-two health centers now operating in Illinois. The personnel in some instances includes part-time services of six physicians and specialists, as well as ten full-time public health nurses. According to available records, more than 6,000 prenatal, preschool and infant cases have received attention through these health centers. A number of communities maintain public health nursing service where the regulation health center has not been established. The work being done, however, appears to be substantially the same.

Tuberculosis Clinics Attract Schoolteachers.—A significant feature of two all-day teaching clinics on tuberculosis that were recently held at Anna and Chester was the attendance of the superintendents and the teachers of the local public schools. Those in charge of the clinics gave special talks on undernourished and tuberculous children, and called attention particularly to the value of early treatment in such cases. The clinics were held under the joint auspices of the local medical and tuberculosis societies, and were under the charge of officers from the Illinois Tuberculosis Association. Similar clinics will be held at Tuscola and Paris during the early part of April.

Typhoid Carrier Isolated.—When six cases of typhoid fever were recently reported from Charleston, an investigation by the state department of public health brought out two definite points of infection. In one case the mother of a patient gave a history of typhoid fever. An examination showed that she is an active carrier although five years have elapsed since she was sick with typhoid. The mother is doubtless the source of infection of her child. Two other cases were traced to a sewer opening from the house where a typhoid fever patient was convalescing. The sewage emptied on the surface of the earth at a point where neighborhood children gathered for play. Two boys who, while playing soldier, dug trenches near the sewer opening, promptly came down with typhoid fever at the expiration of the incubation period. The source of infection for the three other cases appeared to be outside of town.

Chicago

Institute for Nutrition Workers.—An institute for the training of nutrition workers will be conducted under the auspices of the Elizabeth McCormick Memorial Fund in Chicago, June 13-28, inclusive. Dr. William R. P. Emerson, Boston, will give the lectures and class demonstrations, assisted by members of the staff of the Elizabeth McCormick Memorial Fund. The fee for this course will be $50. For information, write to the Elizabeth McCormick Memorial Fund, 6 North Michigan Avenue.

IOWA

Personal.—As the guest of the Jane Lamb Memorial Hospital, Dr. Charles A. Elliott, professor of medicine, Northwestern University Medical School, Chicago, recently delivered an address at Clinton, on "The Basis and Diagnostic Value of Certain Gastro-Intestinal Manifestations."

Health Education.—A measure now before the state legislature provides for the establishment of physical education in the public elementary and secondary schools of the state; after next September, high schools, state colleges, university or normal schools, giving teacher training courses shall provide a course or courses in physical education, and after Sept. 1, 1924, no applicant shall receive a certificate to teach in the public schools of the state who fails to present evidence of having completed an approved course in general physical education in a school or course for teachers of recognized standing satisfactory to the state superintendent of public instruction.

KANSAS

House Increases Senate Recommendations.—For the first time in many years the house ways and means committee introduced appropriation bills for state institutions totaling

a larger amount than that recommended by the senate ways and means committee.

KENTUCKY

Hospital News.—The city of Paducah has appropriated $20,000 for improvements at Riverside Hospital. An additional wing will connect the hospital with the three-story building constructed originally for nurses but never used, but which will now be used for negro patients. Additional equipment will be added to the main building.

LOUISIANA

Lake Charles to Fight Malaria.—The commission council of Lake Charles has voted $2,794 to be used with a like amount—one-half of which is to be provided by the state and the other half by the International Health Board—for the elimination of malaria.

MAINE

Epidemic Encephalitis in Maine.—Ten deaths from epidemic encephalitis have been recorded in Maine with the state department of health. The number of cases which have occurred but have not resulted in death is impossible to estimate, as not all cases of the disease have been reported.

MARYLAND

Training Industrial Physicians.—In a recent lecture before the School of Hygiene and Public Health of Johns Hopkins University, Dr. David L. Edsall, professor of clinical medicine, Harvard Medical School, discussed educating physicians in measures to prevent and remedy unhealthful conditions in manufacturing plants. Dr. Edsall stressed the opportunities in this field, which, he stated, is proving very popular among medical students at Harvard.

Personal.—William H. Welch, director of the School of Hygiene and Public Health, Johns Hopkins University, has been elected to honorary membership in the Société belge de médecine of Belgium.——Dr. Susanne R. Parsons of the Hospital of the Woman's Medical College, Philadelphia, has been selected by Dr. C. Hampson Jones, health commissioner, as director of the welfare center of the Baltimore City Health Department's bureau of child welfare and will assume these duties April 1. Dr. Parsons is a graduate of the Johns Hopkins Medical School.

MASSACHUSETTS

Dean of Tufts Medical School Resigns.—Because of the pressure of his outside practice, Dr. Charles F. Painter has resigned as dean of Tufts Medical School, Boston, but will continue to be a member of the faculty, retaining his title of professor of orthopedic surgery. Dr. Painter has been dean of the school since 1913.

MICHIGAN

Marriage License Bill Defeated.—The measure requiring applicants for marriage licenses to file physicians' certificates stating their mental and physical qualifications was defeated in the state senate by a vote of 16 to 14, after an amendment excluding women from provisions of the bill was adopted.

Antitoxin Bill.—A bill prepared by the state health commissioner and introduced in the state senate carries an appropriation of $25,000 a year for the next two years for the purchase or construction of a suitable plant for the manufacture of diphtheria antitoxin. It also proposes an appropriation of $40,000 for next year and $75,000 for 1923 for manufacture or purchase of antitoxin. It is claimed in support of the measure that private manufacturers' charges are so much above the cost of production as to prohibit the distribution of sufficient antitoxin to stamp out diphtheria.

MINNESOTA

Malpractice Measures Lost.—Two bills on medical malpractice—the first limiting time for filing of malpractice action to two years from cause, and the second providing that local doctors might disclose confidential information where the consulting physician is being sued for malpractice—which were urged for passage by a committee of physicians, were recommended for indefinite postponement by the senate judiciary committee.

NEW JERSEY

Governor Edwards Proclaims May 8-15 Child Welfare Week.—Child welfare in all its varying phases will hold the attention of men, women, and children throughout New Jersey if the plans formulated for Child Welfare Week are carried out. The recently organized council for child welfare, of which Mrs. Harold S. Buttenheim is chairman, has initiated the work, and local and state agencies and departments are cooperating.

New Baby Keep-Well Stations.—Baby Keep-Well Stations, which are part of the child hygiene work of the New Jersey State Department of Health, have recently been opened in Princeton, Netcong, Vaux Hall, New Providence, Edgewater and Flemington, and additional stations to meet the increasing demand for preventive health work have been established in Elizabeth, Harrison, Linden, New Brunswick and South River. Stations now under the direct supervision of the state department of health number seventy-five.

NEW YORK

Medical Center for Soldiers.—According to instructions received by Dr. Clarence F. Graham, United States medical officer, Albany is to be made a hospital center for examination and treatment of disabled soldiers who are entitled to care by the federal government.

New York City

In Memory of Elizabeth Blackwell.—On the one hundredth anniversary of her birth, March 16, the Woman's Medical Association of New York City held a meeting at the Academy of Medicine to honor the memory of Dr. Elizabeth Blackwell, pioneer woman physician of America.

Personal.—Dr. Pang Yuen Tseo, the first Chinese woman physician to practice in Bellevue Hospital, has been appointed physician in charge of the Dan Forth Hospital at Kiukkiang, China, and is returning to her native land after an absence of eleven years. Dr. Tseo came to America in 1909, under the auspices of the Chinese Educational Mission. She graduated from the University of Michigan, Ann Arbor, and Rush Medical College, Chicago.

Drive for Physicians' Home.—A movement which has been under way for some time to establish a home for aged physicians who find themselves in failing health and without funds has been organized and a charter of incorporation obtained at Albany. The officers of the association are: president, Dr. Robert T. Morris; vice president, Dr. Ralph Waldo; secretary, Dr. Silas F. Hallock; treasurer, Dr. Albert G. Weed. Practicing physicians throughout the country will receive an appeal for an annual subscription of $10. Sustaining membership is $100. Every effort is being put forth to raise funds for the purpose.

Campaign to Increase Consumption of Milk.—As the result of a conference of authorities on the feeding of children, held at the New York Academy of Medicine on March 17, it has been decided to begin a city-wide campaign for increasing the consumption of milk among children. The campaign will be carried on through the cooperation of the New York City Department of Health and various diet and health organizations. A start has been made in opening a milk education station, operated by the Borden Farm Products Company, to which Prof. H. C. Sherman is acting as adviser. This station has been open for several months, and many children have been weighed, their diet regulated and the value of increasing the milk diet explained to parents.

Brooklyn's Health Week.—For the first time a "Health Week" will be conducted under the auspices of one of the largest medical societies of the country when the state medical society holds its annual meeting in Brooklyn, for the first time in the 116 years of the society's history, the first week in May. Many of the ministers will cooperate by giving health talks in the churches the preceding Sunday, and there will be a public meeting, May 3, with George E. Vincent, Ph.D., director of the Rockefeller Foundation, as the principal speaker. In connection with the usual medical exhibit there will be a large exhibition, open to the public, of everything having the approval of the profession making for health, good hygiene, and sanitary improvement. Public welfare organizations will have booths and explain the work of their organizations.

Annual Report of Chief Medical Examiner.—Dr. Charles Norris, chief medical examiner, has recently submitted his annual report showing a decrease in the number of violent deaths in this city for 1920 as compared with 1919 and 1918. The total number of violent deaths in the five boroughs in 1918 was 6,200, of which 1,415 were necropsied; in 1919 the total was 4,709, of which 1,462 were necropsied; and in 1920 there were 4,519, with 1,688 necropsies. Automobile and automobile trucks caused 692 deaths, more than 50 per cent. of which were children of 13 years or younger. Wood alcohol

cases decreased from 54 in 1919 to 19 in 1920. Dr. Norris urges the establishment of a homicide court which shall serve as a judicial clearing house in connection with deaths by criminal violence or by casualty or highway accident.

NORTH CAROLINA

Health Activities.—During the recent observance of health week in Winston-Salem, a survey was made to find how many schoolchildren drank milk regularly, and the value of milk as a food was explained by representatives of the state agricultural extension service and the U. S. Department of Agriculture. The Y. W. C. A. carried on a campaign to encourage the wearing of proper shoes, and conducted free physical examinations of girls and young women.

OHIO

Legislative News.—The Tuscarawas County Medical Society has adopted resolutions protesting against the passage of a legislative measure creating new boards of examination for each class of professional men.

Hanna Lecture.—Dr. Charles A. Kofoid, Berkeley, Calif., will deliver the third Hanna Lecture, under the auspices of the School of Medicine of Western Reserve University at Cleveland, March 29, on the subject of "The Clinical and Medical Significance of Parasitic Infections of the Human Intestine with Special Reference to Hookworm, Amebic and Flagellate Infections."

OREGON

Noble Wiley Jones Lectureship.—The lectures are to be delivered this year in Portland by Dr. William Ophüls, professor of pathology, Leland Stanford Junior University, on May 31 and June 1. In 1922 these lectures will be delivered by Dr. Thomas Lewis of London.

PENNSYLVANIA

Establishes Negro Clinic.—A clinic for treatment of tuberculosis among members of the negro race is conducted at the Henry Phipps Institute under the direction of Dr. Henry M. Minton, a colored graduate of the Jefferson Medical College. In addition to the tuberculosis clinic for negroes, the Phipps Institute has prenatal, urologic and gynecologic clinics. Dr. Frank E. Boston, a colored graduate from the Medico-Chirurgical College, has been appointed to take charge of the prenatal clinic.

Nurses' Home Planned at Abington.—Money provided by the late George W. Elkins will be used this spring for erection of a model nurses' home as part of the plant of the Abington Memorial Hospital, founded by Mr. Elkins some years ago as a memorial to his first wife, Mrs. Stella McIntire Elkins. Plans for the proposed building have been sent to builders for estimates. It is understood about $200,000 is available from the fund created by Mr. Elkins for the proposed addition to the hospital and that work will be rushed if the home can be erected for the sum in hand.

Legislative News.—A bill giving the Philadelphia Health Department supervision over the city's meat markets, grocery stores, fruit and produce establishments and all other places engaged in the sale or preparation of food has been introduced in the state legislature. The measure provides a penalty of from $5 to $100 fine for violation of the regulations. ——Another measure directs the health department to issue annual licenses to nonalcoholic bottling establishments for a fee of $2. Penalty for violation of the regulation is a fine of from $5 to $100, or sixty days in jail.——A third measure forbids any person or institution in Philadelphia to receive, board or keep any child under 14 years without legal commitment unless a license has been obtained from the health department.

Physicians Urge Sprowls Bill.—The Sprowls bill, creating a bureau of control of professional licensure in the department of public instruction, was introduced, March 8, by Representative Jadd Sprowls, Washington County, who is a physician. It was first referred to the committee on education, and on March 16 was rereferred to the committee on public health and sanitation of the house. The bill places the bureau of medical education and licensure, the state medical council, the dental council, the board of denal examiners, the Pennsylvania board of pharmacy, the board of optometrical education, examination and licensure, the state board of veterinary medical examiners, the board of osteopathic examiners, for registration of nurses and the state board of undertakers under one central board.

Philadelphia

State Women Urge Medicine Safeguard.—Representatives of the organized club women of Pennsylvania, the W. C. T. U., State Federation of Women, Visiting Nurses' Association and State Departments, appeared before the House Health and Sanitation Committee in support of the Miller Bill forbidding sale of medicines containing opium or its derivatives for children under 12 years of age. A York manufacturer opposed the bill and declared it would ruin certain lines of business. Dr. Thomas S. Blair, Harrisburg, chief of the Bureau of Drug Control, defended the bill and said deaths of infants had been traced to certain preparations and there was danger of making drug addicts of children. Dr. Ellen C. Potter, Harrisburg, of the Department of Health; Mrs. Lyman D. Gilbert and Mrs. James I. Chamberlain of Harrisburg, and Mrs. Frank Miles Day of Philadelphia strongly urged the bill.

TEXAS

Health Survey and War on Mosquitoes.—The U. S. Public Health Service in a health survey of Fort Worth finds that it compares favorably with other cities of its size in the South. The survey will include all cities of 100,000 or over. ——Fort Worth reports the organization of the rural districts under a mosquito expert to oil, drain or fill pools where mosquitoes breed and stock streams that cannot be drained with fish. An exhibit car belonging to the Cotton Belt Railroad will be sent to aid Waco and other local campaigns, and other railroads have signified willingness to cooperate.

Health Department Plans to Enforce New Laws.—New health laws already enacted or awaiting the governor's signature provide for consolidation of the pure food and drug department and the health department, prescribe sanitary regulations for restaurants, hotels, cafés, and dining cars; prohibit employment of persons suffering from contagious diseases in barber shops or beauty parlors and require proprietors to register with the state health departments; require prophylactic solution to be dropped in the eyes of infants to prevent blindness, and the regulation of maternity homes and baby farms.

TENNESSEE

Child Health Week.—Among the features of the child health campaign in Chattanooga and Hamilton County, March 3-19, were tooth brush drills and illustrated lectures in the schools conducted by representatives of the United States dental unit, and city health officials made especial efforts to enforce the milk ordinance which requires all dairymen supplying the Chattanooga market to have their herds tuberculin tested and to ship their milk in regulation containers.

WISCONSIN

Medical Legislation.—The Milwaukee Medical Society, in cooperation with dentists, druggists, and health and accident insurance men, will inaugurate a campaign against hostile medical legislation, including compulsory health insurance with state fund features.

CANADA

Public Health Association Convention.—The tenth annual convention of the Public Health Association will be held, May 16-18, at Toronto.

Medical Society Prize.—The Winnipeg Medical Society offers for competition among the medical men registered in Manitoba, who graduated not earlier than 1914, a prize of $200 to be awarded for the best essay on any subject related to the science or art of medicine; the essay to be in the hands of the secretary of the society not later than Sept. 1, 1921. The society reserves the right to withhold the prize unless, in the opinion of the judges to be appointed by the executive council of the society, the essays are of sufficient merit.

Personal.—Dr. Newton A. Powell, Toronto, having reached the age limit, has retired from the chair of medical jurisprudence in the University of Toronto, and has been succeeded by Dr. Gideon Silverthorne.——Dr. Peter H. Bryce, who is retiring from the public health service of the Dominion of Canada, is at present spending some time at the University of Toronto, studying nervous diseases and the diseases of nutrition, with a view to taking up consultation work in these diseases.——Dr. Ernest L. Armstrong, Baden (Ont.), has been appointed assistant pathologist at the London (Ont.) Institute of Public Health, succeeding Dr. Earl W. Watson, who resigned to accept a position on the staff of the University of Sheffield, England.

Damage Suit Against Dr. Archer Dismissed.—Much interest in the medical profession of Ontario has been taken in the suit for alleged malpractice against Dr. Robert Archer, Port Perry, Ont. In September last, by the light of an oil lamp, Dr. Archer was compelled to perform an emergency operation in indifferent surroundings. Time being an essential factor in order that the woman's life might be saved, the abdomen was closed, but a small sponge remained inside, necessitating a subsequent operation for its removal. The result was a suit for damages for $20,000. Mr. Justice Sutherland, who sat on the case, has dismissed the action, stating that the failure to remove the sponge could not be regarded as actionable negligence or as more than accidental. The plaintiffs are to pay the costs of the suit.

GENERAL

American Pediatric Society.—The thirty-third annual meeting of the society will be held at Swampscott, Mass., June 2-4.

Change in Date of Meeting.—The American Laryngological, Rhinological and Otological Society will hold its annual meeting at the Hotel Chelsea, Atlantic City, N. J., on June 3 and 4, 1921, instead of June 1 and 2 as previously announced.

Antituberculosis Symbol Protected.—The National Tuberculosis Association has registered as a trade mark the double barred Red Cross symbol of the antituberculosis campaign, to prevent its unauthorized use. Local health agencies must obtain permission from the national association before using the symbol in any of their literature.

Dr. Hubert Work Appointed Assistant Postmaster-General.—President Harding has tendered a recess appointment as first assistant postmaster-general to Dr. Hubert Work, Pueblo, Colo. He is expected to assume the duties of the office on his arrival in Washington within the next few days.

New Medical Journal.—The American Society of Tropical Medicine announces a new publication for physicians and research workers, to be known as the *American Journal of Tropical Medicine*. The journal will be published bimonthly. The transactions of the annual meetings of the society will be published in the journal. H. J. Nichols, Medical Corps, U. S. Army, Army Medical School, Washington, D. C., is the editor.

National Tuberculosis Association Votes Budget.—The executive board of the National Tuberculosis Association at a meeting in Indianapolis, Ind., March 12, voted a budget of $262,000 to provide for the year's work. This sum represents 5 per cent. of the proceeds from the sale of Christmas seals, the states each retaining 95 per cent. of the proceeds for local work. The largest single appropriation was $75,000 for an educational health campaign to be carried out through the schools.

Mrs. Hamilton Wright on Opium Committee.—Mrs. Elizabeth Washburn Wright, Washington, D. C., author of "The Color of the East," has been appointed by the Council of the League of Nations to the board of assessors, which will cooperate with the league's advisory committee on traffic in opium. Her co-workers will be Sir John Jordan, Great Britain, and M. Henri Breanier, France. Mrs. Wright is the widow of Dr. Hamilton Wright, internationally known as a foe to the narcotic traffic and a member of the peace commission in Paris, where he was killed in a street accident.

National Hospital Day.—For the purpose of making the public better acquainted with the work of 8,000 hospitals in the United States and Canada, the first National Hospital Day is to be observed, May 12—the one hundred and first anniversary of the birth of Florence Nightingale. Each hospital will arrange its own program and inspection of the hospital and training school by the public will be featured in many localities. However, general direction of the day will be in the hands of the National Hospital Day Committee, 537 South Dearborn Street, Chicago, which is organizing subcommittees in each state and Canadian provinces.

Regulations to Be Issued by Government on Prescribing Beer.—Regulations putting into effect the opinion of former Attorney-General Palmer, authorizing the use of beer on physicians' prescription are expected shortly. Until the regulations are drafted and put into effect, druggists cannot fill prescriptions and physicians cannot issue them. It is reported that a rough draft of the proposed regulations has been prepared but no final action has been taken by Prohibition Commissioner Kramer. After that official approves them they must go to the Commissioner of Internal Revenue for his approval and thereafter to the Secretary of the Treasury for final action. On account of the fact that the incoming Republican administration will name a new commissioner in place of the present incumbent, Commissioner Williams, it is evident that there will be long delay before regulations are finally promulgated.

Bequests and Donations.—The following bequests and donations have recently been announced:

Children's Free and Women's hospitals, Home of Friendless and Protestant Orphan Asylum, each $10,000; Florence Crittenden Home, and St. Luke's and Grace hospitals, each $5,000, by the will of Julia Frances Owen, Detroit.

Madison County (Ill.) Anti-Tuberculosis Association, a donation of $590 to be used to the best advantage for tuberculosis work in the county, by Local Union No. 720, United Mine Workers of America, Livingston, Ill.

Methodist Hospital, Philadelphia, $5,000; Presbyterian Hospital, Philadelphia, $1,000, by the will of Mary Finney.

Babies' Hospital, Haverford, Pa., $100; Germantown (Pa.) Hospital, one-sixth of the income of the residue, after the death of certain annuitants, by the will of Sallie W. Johnson.

Sydenham Hospital, New York, an anonymous gift of $100,000 and $25,000 from Leon Schinasi to be added to the building fund of the new hospital.

LATIN AMERICA

Nineteenth Annual Meeting of the Porto Rico Medical Association.—The *Bulletin* of the Porto Rico Association just received gives the minutes of the meeting of the House of Delegates at Ponce, February 11, with Dr. P. Malaret in the chair and Dr. A. R. Raugier, secretary. The members of the council present included Drs. P. Gutiérrez Igaravídez and R. López Sicardó besides the presiding officer. The president of the association is Dr. I. González Martínez, and the vice president, Dr. G. Zalazar. One of the important matters discussed was the amendment of the law so that only a registered physician could be eligible to the position of health commissioner. Also that cooperation be established between the medical association and the lawyers' organization in respect to medicolegal matters. The publication of the *Bulletin* is in the hands of Dr. Del Valle Atiles y Avilés. The annual meeting included a special conference open to all the physicians of the public health and charities service, to discuss ways and means for improving municipal medical service, remuneration, separation of the public health service from politics, adoption of a professional code of ethics, workmen's compensation, etc. The annual meeting concluded with a banquet at the Hotel Palmer. The association had 102 members enrolled at its last report to the American Medical Association, of which it is a constituent association.

FOREIGN

Publication of Hippocrates' Works.—A Berlin merchant has presented anonymously the Prussian Academy of Sciences with 150,000 marks to be applied for the contemplated publication of the works of Hippocrates.

Dr. Roentgen Honored.—The twenty-fifth anniversary of the discovery, by Prof. W. Roentgen, of the "*x* ray" was recently celebrated in Germany. Dr. Roentgen retired from the chair of experimental physics at the University of Munich last year.

Rockefeller Foundation Gift.—The Rockefeller Foundation has announced the gift of 43,000,000 francs toward a total budget of 100,000,000 francs for new buildings and endowments of the University of Brussels Medical School. Part of the fund will go to the establishment of a nurses' training school in memory of Edith Cavell and of Madame Depage.

Disinfection of Sputum. — The *Deutsche medizinische Wochenschrift* states that the German public health authorities have recently warned the public anew that no reliance can be placed on chemical disinfection of tuberculous sputum unless formaldehyd is used. Even a 5:1,000 solution of mercuric chlorid does not kill the tubercle bacilli in the tenacious clumps of sputum. They impress on the laity the necessity for relying on heat alone for destruction of tubercle bacilli.

Personal.—In recognition of the knighthood conferred upon him by the king, Sir Dawson Williams, editor of the *British Medical Journal*, was entertained by the council of the British Medical Association at a complimentary luncheon, February 16. ——The *Policlinico* reports the arrival at Rome of Dr. C. Fama, commissioned by the public health service of New York to investigate conditions and the causes of certain infectious diseases noted among the immigrants on arrival at New York.

Court Decision on Gauze Sponge in Patient.—The *Wiener klinische Wochenschrift* cites a recent court decision at Flensburg, confirmed by the upper court at Kiel, refusing to allow a claim for damages against a surgeon because a gauze sponge had been left in the abdomen after an operation.

The court decision stated that, judging from the testimony of the experts, no absolutely reliable method for avoiding this mischance is known. It was merely an unfortunate occurrence.

Pediatrics Congress of the Northland.—The Second Nordiske Pediatriske Kongress is to convene at Stockholm, June 20-21. The single theme appointed for discussion is chronic nutritional disturbance in artificially fed infants. The etiology is to be discussed by Johannessen of Christiania and Lövegren of Helsingfors; the clinical picture by Poulsen of Copenhagen, and the treatment by Wernstedt of Malmö. Prof. I. Jundell is to preside, and Dr. A. Collett, 26 Incognitogt, Christiania, will supply further details.

Deaths in Other Countries

Dr. **W. Behrens** of Biel, one of the pioneers in roentgenology in Switzerland and a victim to roentgen-ray injury with metastasis in the lungs.——The cable reports the death of Dr. **A. Leray,** chief of the roentgen-ray work at a Paris hospital, also from roentgen-ray injury acquired in war work. He had received his medical degree in 1895.——Dr. **K. S. Behm** of Stockholm, aged 59.——Dr. **E. P. Porst** and Dr. W. **B. Thomsen,** both of Copenhagen.

Death of Dr. Killian.—The death is reported of Dr. Gustav Killian, professor of laryngology and rhinology at the University of Berlin since 1911, noted for his numerous works on subjects connected with his specialty and improvements in technic, aged 61. He was the guest of the Section on Laryngology at the Atlantic City meeting of the American Medical Association in 1907, and delivered an address, June 4. At that time he was professor and director of the nose, ear and throat clinic at the University of Freiburg.

Government Services

Director for Speedway Hospital

Surg. Mark J. White, Public Health Service, has been ordered to Chicago to take charge of the Speedway Hospital.

Prominent Physicians to Address General Staff College

Surgeon-General Ireland has completed plans to have prominent physicians of the country deliver addresses before the General Staff College at Washington, D. C. Dr. Joel E. Goldthwait, Boston, and Dr. Thomas W. Salmon, New York, recently went to Washington to speak at the college.

Circulars Describing the Medical Corps of the United States Navy

There is at present a large number of vacancies in the Medical Corps of the Navy, and examinations are being held at frequent intervals in several of the coast cities (both East and West) and also at Chicago. Circulars of information for persons desiring to enter the Medical Corps of the Navy may be obtained by addressing the Surgeon-General, U. S. Navy, Navy Department, Washington, D. C.

Army Medical Reservists

The Surgeon-General is building up a reserve list of officers of the Army Medical Department. Regulations soon to be announced will permit an officer in the Public Health Service to hold a commission in the Officers' Reserve Corps of the Army, subject to the approval of the Surgeon-General of the Public Health Service as an indication that the head of this branch has no objection to the officer in question being ordered to active duty with the Army for training in peace time and assignment during war.

Hospital Advisory Committee Active

The committee charged with selecting sites for soldiers' hospitals has established headquarters in the Butler Building, Washington, D. C. On March 30-31, it heard representatives from many parts of the country who wished to offer locations for hospitals. The chairman of the committee, Dr. W. C. White, Pittsburgh, announces that the committee will consider only government-owned sites or locations which the communities are willing to donate to the government. The committee will have charge not only of the selection of sites, but of the type and character of buildings to be erected.

Awarded Distinguished Service Medal

Lieut.-Col. John L. Shepard, Medical Corps, Washington, D. C., has been awarded the distinguished service medal for "high administrative, technical and constructive ability in preventive measures adopted against epidemics and in the conservation of physical defectives by their segregation and development. Later he performed conspicuous services in connection with hospital demobilization in France and the return to the United States of the sick and wounded."——Lieut.-Col. Raymond F. Metcalfe, Medical Corps, Fort Sam Houston, Texas, has been awarded the distinguished service medal for exceptionally meritorious service as division surgeon, thirty-sixth division, during serious epidemics of influenza in 1918.

Gorgas Memorial to Broaden Scope

According to an announcement by Rear Admiral William C. Braisted, plans are being developed to broaden the scope of the Gorgas Memorial Institute at Panama into a research and teaching institution of international extent. Three American physicians will be sent to Panama to put the plan into effect as soon as preliminary organization work is completed. They will begin research work in tropical medicine under the superintendent of the hospital. Later the institute will have its own building adjoining the hospital, in front of which will be erected a statue of General Gorgas. Other institutions teaching tropical medicine that have indicated their willingness to cooperate in furthering the aims of the Gorgas memorial include Harvard and Johns Hopkins universities, the Rockefeller Foundation, the University of California, the London School of Tropical Medicine, and the Liverpool School of Tropical Medicine.

Medical Laboratory in the Field

For the first time in the history of the U. S. Army a medical laboratory with an organization of enlisted men and officers has been established and henceforth will be a regular unit in the service. The object of this laboratory is the prevention and control of cummunicable diseases and the maintenance of the health among military personnel and animals. There will be one of these units with each regiment. Laboratory examinations will be conducted in typhoid-paratyphoid fevers, bacillary dysenteries, malta fever, cholera, infections of the respiratory tract, including diphtheria, pneumonia and meningitis, protozoal infections, including malaria and filariasis, pathogenic organisms causing venereal diseases, and helminths. A specially designed equipment containing small chests that are readily packed and unpacked in the field has been perfected by the Medical Department to carry out the routine clinical procedures required.

Survey of Public Health

A conference was held, March 25, of physicians summoned by Brig.-Gen. Charles E. Sawyer, President Harding's personal physician, to discuss with the President proposed plans for reorganization. Those attending the meeting were Surgeon-General Cumming, U. S. P. H. S.; Surgeon-General M. W. Ireland of the Army; Surgeon-General E. R. Stitt of the Navy; Dr. Charles H. Mayo, Rochester, Minn.; Dr. Edward Martin, Pennsylvania, commissioner of health, and Dr. William F. Snow, New York, American Social Hygiene Association. General Sawyer said the discussion was a preliminary one to action for uniting government health units. An advisory council was formed, consisting of the Surgeon-Generals of the Army, Navy and Public Health Service and Dr. Mayo. Two other members will be added to the council. One will be an educator and the other a woman engaged in public welfare work.

Foreign Letters

LONDON

(From Our Regular Correspondent)

March 7, 1921.

The Spahlinger Serum for Tuberculosis

"Cures" for cancer and "cures" for tuberculosis are brought forward with great assurance from time to time, but never stand the test of time. For the lay press they seem to be good copy, and "successes" are freely accepted and lead to the greatest optimism. When physicians stand aloof this is declared to be due to narrow professional jealousy, which will not admit that anything good can come from men outside their ranks. The latest example is a serum for tuberculosis said to have been discovered by a Swiss "scientist" named Spahlinger. In the lay press it is described as one of the greatest discoveries of the age. It is said to have been used in London before the war, and the lay press has hunted up some patients who are declared to have been cured by it. Questions have been asked in Parliament about the treatment. Dr. Addison, the Minister of Health, replied that he had made inquiries but that much further investigation was necessary. So far only one physician of any prominence has pronounced in favor of the treatment. He declares that he reexamined in 1920 patients treated in 1914-1915 for advanced phthisis and surgical tuberculosis, and that they are permanently cured.

Expedition to Investigate the Cause of Elephantiasis

An expedition from the London School of Tropical Medicine, led by the helminthologist Dr. Leiper, is about to start for the West Indies to investigate the filaria which causes elephantiasis, at the request of the colonial office. The expedition will consist of six members, of whom one is a Chinese. Its headquarters will be Georgetown, British Guiana. It is being organized under the supervision of Sir Patrick Manson. It is proposed to place a patient suffering from elephantiasis in a room in which a number of mosquitoes are let loose. After they have bitten the patient they will be sorted out and an attempt made to discover which species transmits the disease.

State Control of Vaccines and Antitoxins and Certain Drugs

The supervision and control of therapeutic substances which cannot be treated adequately by chemical means is recommended by a committee appointed by the ministry of health. The substances include vaccines, serums, toxins, antitoxins and analogous products, arsphenamin and its analogues, and various drugs. It is proposed that the controlling authority shall be a committee whose main functions will be to decide from time to time what substances are to be brought under control, and to prescribe the methods of standardization and testing. It is further proposed that there shall be a central laboratory, under government control, where standards shall be prepared and maintained, research carried out, and tests made to ascertain that the products issued by manufacturers conform to standards laid down. The Medical Research Council, which already has the requisite organization, should be responsible for the laboratory. The method of control should include the licensing of manufacturers, inspection of their plant, premises and processes, and the testing of the finished articles. Products made abroad should be subject to similar restrictions.

The System of Panel Records and Medical Secrecy

In a previous letter to The Journal the storm of criticism aroused by the new record cards, introduced by the ministry of health, has been described. Most of the opposition was manifested by physicians who declared that time which should be devoted to the treatment of patients would be occupied in making comparatively useless records. The objection that the cards were open to inspection by others than the physician concerned, and that therefore professional secrecy was violated, mostly came from the press and from organs which in other ways did not seem to concern themselves much about the interests of the working classes. The ministry of health is now in possession of facts as to the reception of the cards by insured persons. Out of 10,000 approved societies and branches, only five have made protests, and from 150 panel committees (which consist of physicians) the same number of representations have emanated. These protests and representations relate in the main to points of detail. Insurance committees which administer medical benefit have made no complaint whatever. In the House of Commons the government was asked whether subpenas may be granted compelling the production of the cards in legal proceedings and whether panel physicians concerned in their preparation may be called on to support the statements in them. The government replied that though a person may be compelled by a summons to bring any document, private or otherwise, into court, the document does not itself become admissible in evidence. A record card is not evidence of the facts stated in it. If it is desired to prove them, this must be done in the ordinary way by the oral evidence of the physician himself. The government was also asked whether physicians would be guilty of violation of secrecy and liable to actions for libel if confidential entries on medical cards are entrusted to private secretaries. The reply was that it was in the highest degree unlikely that there would be any cause for action against the physician unless he was shown to have been actuated by malice. The general question as to the position in law of medical secrecy has been submitted to the lord chancellor and is being considered.

The Epidemic of Encephalitis

The number of cases of epidemic encephalitis is decreasing, as the number of cases notified shows: week ending February 5, 116; February 13, 66; February 19, 57. The numbers in London for these weeks were 22, 16 and 9. These figures bear out the anticipation, based on the experience of the last three years, that there would be a rapid fall in the number of cases by the end of February. The disease is expected to disappear in March.

PARIS

(From Our Regular Correspondent)

March 11, 1921.

National Propaganda Against the Great Social Evils; the Aid of the United States

The Union des grandes associations françaises pour l'essor national (federation of French associations for national advancement), after finishing the active campaign carried on throughout France for the benefit of the devastated regions, is now organizing in all departments, under the direction of Monsieur Leredu, minister of social hygiene, with the aid of the Rockefeller Foundation, an energetic propaganda against the social evils: depopulation, alcoholism, infant mortality, tuberculosis and poor housing facilities. To call attention to the peril that threatens France from these evils, the federation organized recently a demonstration, which took place at the Sorbonne, under the chairmanship of the ministry of social hygiene. At this demonstration Monsieur Leredu, minister of hygiene; Monsieur Léon Bérard, minister of public instruction and fine arts; Professors Pinard and Bernard, members of the Academy of Medicine; Mr. Linsly R. Williams, director of the Commission Américaine de préservation contre la tuberculose en France, and Monsieur

F. Riemain, general secretary of the national league against alcoholism, were among the speakers of the occasion. In his address the minister of public instruction thanked in warm terms the United States for the "immense and valuable" aid that its citizens had given France in the campaign against the social evils. As evidence of the importance of this aid he cited these figures: Forty-nine departments of France have been organized in collaboration with the Rockefeller Foundation since it first entered the field in 1917, and have adopted a complete program. In these forty-nine departments, 221 local committees on defense against tuberculosis have been organized and fifty-two committees are in process of formation. Two hundred and seventy-one antituberculosis dispensaries have been established in France, whereas in December, 1917, there were only twenty-two. Of this number 186 were founded through the initiative, collaboration or subvention of the Rockefeller Commission. Eighty-eight dispensaries are in process of organization, and ninety-nine are being planned for the near future. In 1920, thirty departments were organized and subventioned by the Rockefeller Commission. The efforts put forth by the French in organizing the campaign are shown by these figures: In twenty-six departments, in 1920, the Rockefeller Commission expended 1,600,000 francs for subventions. In the same departments there has been appropriated and contributed more than 7,000,000 francs by the general councils, municipal councils and private interests, as well as by the ministry of public hygiene and the national committee on defense against tuberculosis.

For and Against Prohibition of Alcohol

In a previous letter (THE JOURNAL, July 24, 1920, p. 255) I referred to the peculiar campaign that the public press is carrying on against American prohibition. I pointed out that in this campaign there was a lack of judgment and open-minded sincerity. These inconsistencies shock our sensibilities in the daily press, but in medical journals they ought not to be tolerated. However, in a recent number of the *Vie médicale* I find three news items, all more or less fanstastic in tone, which poke fun at American prohibition. Herewith one entitled "A Terrestrial Paradise":

> We all know that the virtuous Americans, having suppressed the consumption of alcohol in their country, have been filling our heads with the wonderful results that this radical measure has accomplished. No more crime, no more insanity—prisons and asylums closing their doors—it was enough to make us wish that, following their example, the whole world might be made "dry." However, recent statistics are of such a character as to dampen our ardor, or at least to modify it. If the reported extraordinary results have actually been secured by our good friends the Yankees, it is certainly not to temperance that the honor must be ascribed. The statistics in question inform us that during the year 1920 the people of the United States consumed, in spite of all interdictions, approximately 200 million liters of alcoholic beverages. We are informed that about 14,000 secret distilleries are in operation in the country and that the traffic in various forms of spirituous beverages—whisky at the head—is increasing day by day. We are also able to gather from these statistics that our country has not the monopoly of laws hastily passed without sufficient preliminary investigation—laws that are inapplicable and remain inapplicable. There is some consolation in the fact that we do not stand alone in the matter of hasty legislation.

What a pity that the *Vie médicale* neglected to state the source of its statistical information. It is doubtless from the same source as the sensational news item sent over last summer to the effect that 2 miles off the coast of Cuba a floating island had been built up where thirsty Americans could become inebriated in all privacy. In place of giving credence to mendacious pseudostatistics circulated by international syndicates of liquor merchants, it would be more worthy of a medical journal to rely on the statistics communicated recently to the Société médico-psychologique by Dr. de Clérambault, chief physician of the Infirmerie spéciale pour l'admission des aliénés. These statistics show the results brought about in our own country by the prohibitive measures adopted during and since the war. These measures, while they are far from being as comprehensive as American prohibition, comprise: the suppression of the sale of absinth (law of March 16, 1915), the limitation of the number of places devoted to the retailing of intoxicating liquors (law of Nov. 9, 1915), and the law of Oct. 1, 1917, with reference to drunkenness. Owing to the influence of these three laws the number of alcoholics admitted annually to the Infirmerie spéciale has diminished more than one half, whereas the number of the other patients has changed but little. The gravity of the cases of alcoholic delirium taken by themselves and also considered with reference to their social consequences has decreased. The total number of alcoholics of both sexes, during the first eight months of 1911, was 407, and for the same period in 1913, 452. In 1920 the number was reduced to 211. The number of alcoholics without distinction of sex has been diminished in the proportion of 8:3. The decrease as concerning men is as 14 to 5; for women the decrease is not so marked, being as 8 to 5.

Dr. Legrain, who has made a special study of questions pertaining to alcoholism, has confirmed the results pointed out by Clérambault. He cites figures taken from the statistics of foreign countries, which agree with those of Paris. During the war the number of cases of insanity of alcoholic origin has decreased 75 per cent. in Germany. In Belgium, according to Professor Ley, they were unknown during the last year of the German occupation, since Germany exerted, for reasons entirely foreign to the interests of the Belgian population, a very strict control over the consumption of alcohol. In Bavaria, in 1906, 23 per cent. of the insane were alcoholics. In 1917 there were only 3 per cent. of the insane who owed their mental trouble to alcohol. But during the last few months the restrictions on the consumption of beer have been removed and alcoholism is beginning to reappear.

BUENOS AIRES

(From Our Regular Correspondent)

Feb. 19, 1921.

Modification of the Intern System

Student centers have been much worked up over the plan submitted by the present director of public health, modifying the internship served by medical students at hospitals during the last two years of their student career. The intern system represents a tradition and is undoubtedly what has permitted our physicians to acquire the necessary clinical experience to practice their profession. After a competitive examination in which marks, diplomas and, unfortunately, political influence are taken into consideration, the students become minor interns and later major interns. These interns, or practicantes, accompany the physician on his daily rounds and are entrusted with the supervision and treatment of patients. Each hospital has always on duty an intern physician who can be consulted in difficult cases, and who is to operate in emergency cases and others when the surgeon does not reach the hospital in time.

The present director of public assistance is the third one who has tried to change the old intern system. The chief reasons advanced are: 1. Students do not always behave properly, and they occupy the pavilion needed for other purposes. On this account they should report in the morning and sleep outside. 2. It is asserted that they do not visit the wards regularly and very seldom outside of morning hours. 3. It is said that their duties could be discharged more efficiently by nurses. This plan is opposed strongly by the students and the majority of the hospital medical staff, professors, etc., who assert that the intern system is essential for medical teaching and that the medical school cannot furnish a comparable clinical training; that all physicians have so far acquired in this way their professional attainments; that through the intern system, physicians have learned for several generations to practice medicine. It would not be possible

to make licensed physicians do this after completing their studies, which gives them the full right to practice their profession. Neither could the public assistance authorities afford a very large number of intern physicians. It is not considered that the services of nurses as they graduate from the new nursing school would be precisely equal to those now rendered by intern students. On the other hand, the lack of attendance or misconduct might be easily corrected by disciplinary measures. Judging from the looks of things, it is not likely that any substantial changes will be made in our present intern system.

Postgraduate Courses

For the first time there has been organized in our medical schools postgraduate courses. The first trials have met great success and promise well for the future.

Municipal Hospitals

The municipal authorities, on the one hand, and the campaign conducted by socialist councilmen, on the other, have centered public attention on the hospital work performed by the public assistants. There are 5,000 beds at the disposal of the municipal authorities, without including a like number available in national and private hospitals. The demand exceeds the supply of available beds, especially in tuberculosis sanatoriums. On this account the public assistance authorities are enlarging some hospitals and building a maternity for tuberculous mothers, and have under consideration the construction of a tuberculosis sanatorium at Rodríguez, near the capital. The proposed changes are somewhat extensive. One hundred and fifty thousand dollars have been assigned to the purchase of ambulances and other transportation facilities.

VIENNA

(From Our Regular Correspondent)

Feb. 28, 1921.

Contract Practice Among State Officials

An understanding has been arrived at between the medical profession and the government on behalf of its officials and their dependents. The chief difference between this contract and the other "sick club" or panel practice contracts is to be found in the rate of payment and calculation of fees for physicians. Any general practitioner desiring to work under this contract may have his name placed on the list of physicians from whom the patient may select his medical adviser. The patient, however, is bound to choose a physician living in his district, if he wants the state to pay the fees. If he selects one living farther off, the patient himself must pay the difference between the fee stipulated in the contract and the physician's demand. As a rule the physician gets for the first examination of the patient at his own office a fee of 39 kronen, and for the subsequent consultations, half that fee. For a call at the patient's home in daytime, double fees are paid; at night time the fees increase 100 per cent. Special services, like catheterization, subcutaneous injection, application of a splint, or of extensive bandages, are rated extra as one or more points (up to four points), each point being valued at 25 per cent. of the fee unit. Specialists can be consulted only on special desire of the general practitioner. Their fees are 100 kronen for the first examination, and 50 kronen for the subsequent calls. Otherwise their work is valued on the same principle as that of the general practitioner—100 per cent. for night calls and from one to four points for extra work not involved in the routine examination. Operations will be paid at the rate of from 25 to 30 per cent. of the normal better-class practice. As a rule, patients and physicians are expected to restrict their respective calls to the members residing within their district. A "distance charge" is admissible, but must be borne by the patient himself. The physician may demand payment from the patient at once, but the latter gets his justified expenses refunded by the institute. The funds of this institute are formed by regular contributions by the insured persons and by the state. The first named pay 7.5 per cent. of their salary toward this fund, while the state pays an equal sum. In the calculations, each part is expected to pay 30,000,000 kronen a year, assuming 150,000 officials with an expenditure of 400 kronen a year, as figured out from the experiences of other sickness insurance clubs. The government has laid stress on the fact that the 25,000 state pensionists be permitted to become members of this institute as well as the household members of the regular state officials, bringing the total of insured persons to 400,000. The scheme is now already in full operation, and so far as medical opinion can be ascertained, is satisfactory to both sides. The question is only whether the calculations on which the government has based the institute will prove valid at the end of the first year, or, in other words, whether the expenditure will not be higher than the income.

Fighting Insobriety

One of the worst effects of the war was the demoralization of many weak intellectual elements, and it is only too clear that alcohol is not the best means to improve morals and social downfall. Therefore, the fight against the scourge must be continued with utmost zeal, apart even from the direct medical detriments it causes to the organism. The practical fight against drinking—or insobriety—is at present in this country only at its initial stage, and it will require much elucidating and illustrative work to call the attention of the large masses to evil effects of drunkenness. Only then will alcohol legislation find the necessary response in public feeling and sentiment. Now it is the work of private societies to promote, with the help of the state, the ideas of sobriety or abstinence among the population. Propaganda by the written and spoken word, by migrating exhibitors and lectures, and by instructive leaflets is earnestly encouraged by the board of health. There is one serious drawback to this kind of work in that the drunkard rarely, if ever, applies voluntarily for help in one of the few homes intended for such treatment, while also his friends and relatives shrink away from these homes, out of a sense of false shame. We have had only six homes of this kind in our country. Of these, five are cared for by religious societies, and only one is a public asylum. But within the last few weeks, an energetic effort has been made by the state in this line. While in 1919-1920 the sum allotted by the budget for this purpose amounted to no more than 63,000 kronen, it has been trebled for this year, and special care has been made to eliminate from the jails and prisons such cases as offer prospects of improvement and moral rejuvenation and to shelter them in such homes. Lately the Academic Antialcohol League has made remarkable progress among our students—formerly very fond of beer—and whole districts have joined the general antialcohol movement propagated by numerous medical societies.

Physical and Mental Examination of Schoolchildren

An interesting report on the examination of 661 schoolchildren just entering the first grade in one district was issued recently. All children were examined by the physician in the presence of their parents, the children having their body uncovered in the upper part. The urine was examined in every case, and the eyes tested with Snellen's Table 17. A large number of the children—all 6 years old—showed glands in the region of the mandibular space, which have been referred to bad teeth or to changes in the nasopharyngeal space or to vermin. But these glands are of no importance, because they generally are absent in older children. More

stress is attached to the clavicular glands, which are believed to be associated with a predisposition toward tuberculous disease or with its presence. The average height of the boys was 112 cm.; the weight, 19.3 kg.; the circumference of the thorax at the nipple, from 54.6 to 58 cm.; of the girls, 110.5 cm., 18.66 kg. and from 52 to 56 cm. Twenty-seven children had marked adenoids, and 208, marked glands; 48 suffered from rachitic changes; 7 had organic heart disease, 35 goiter, 23 myopia of mild degree, and 8 hernia (6 boys and 2 girls). In 66 cases there was apicitis with negative Pirquet test; in 6 the Pirquet test was positive. Fifty-three had enlarged tonsils; 11 suffered from neurasthenia, 20 from deafness, and 39 (12 boys and 27 girls) from scoliotic changes. Seven girls had speech defects; 7 children were found with hydrocephalus, while 29, all girls, had vermin, apart from 11 cases of scabies. It was found that special care should be given to defects of position, as already of these youngsters, real school "recruits," no less than 81, or 12 per cent., suffered from faults of this kind (hanging shoulder, flat breast, beginning scoliosis) which become more pronounced through faulty sitting in school. Dental cavities are very frequent, and the necessity of a school dental clinic is obvious. All the defects were reported to the parents, who were ordered to have the house physician called to the child in order to correct whatever was required. An interesting investigation was also made by Professor Brezina as to the weekly fitness of the schoolchildren. The teachers of a number of schools in Vienna were asked to classify the entire number of their pupils as to their psychic fitness each day; 1 equaling good, 2 middling, 3 bad. It was found that each day was marked by a certain figure in boys, Monday being worst, with improvement every subsequent day until the optimun was reached Saturday. With girls the difference between Monday and the week end was not so marked. Here the middle of the week seems to be the optimum. Sunday seems to be really a day of distraction, causing a relaxation of the apperception and the sense of duty even in children. Similar investigations conducted with tram and bus conductors and drivers and with policemen seem to show that these men too are prone to undesirable distraction on Sunday—alcohol—but less so if their day off is a week day, when generally there is less occasion for such distraction than on Sunday.

BERLIN

(From Our Regular Correspondent)

March 2, 1921.

Personal

Professor Killian, director of the Berlin Laryngologic Clinic, died, February 24, from stomach cancer, at the age of 61. Killian was the most eminent German laryngologist of the present day. In 1888 he became a member of the Faculty of Medicine of Freiburg, and the following year was appointed director of the Freiburg Laryngologic Clinic. After the death of Bernhard Fraenkel, in 1911, he was called to Berlin. His most important contribution to science is doubtless his method for the direct examination of the trachea and the bronchi (bronchoscopy). This procedure has proved particularly valuable for the removal of foreign bodies from the lower air passages. Also suspension laryngoscopy (Schwebelaryngoscopie) owes its origin to him. Further valuable investigations are concerned with roentgen-ray examinations of the larynx and the accessory nasal sinuses.

Professor Thiemich, director of the University Children's Hospital in Leipzig, died, the middle of February, at the age of 51. He was a pupil of the Berlin pediatrician Professor Czerny. His most important investigations were in the field of diseases due to changes in metabolism. He devoted himself especially to a study of the exudative diathesis, to which subject he made valuable contributions.

In accordance with the new law in regard to the age limit of university professors, Professor Flügge retires from the Berlin Medical Faculty, April 1. For the chair of hygiene thus left vacant, Professor Uhlenhuth has been proposed. Until the close of the war, Uhlenhuth was director of the Hygienic Institute in Strasbourg, and under his direction a model new institute was built, which has now been turned over to the service of the French, along with the University of Strasbourg.

As the successor of Professor von Schleich, who is retiring, Professor Stock of Jena has been called to Tübingen as director of the University Eye Clinic.

Federation of Krankenkassen and Physicians

A union or federation has been formed between the health insurance societies and the medical societies of Baden. These are the tasks that the federation sets for itself: 1. The federation will undertake, by means of mutual endeavor in the field of social legislation and social hygiene, to promote a good understanding between the health insurance societies (Krankenkassen) and the physicians and, by working in harmony, to solve the problems of the health insurance societies in the interest of the common welfare. 2. In furtherance of these purposes the federation will appoint joint committees, to which special problems will be assigned to work out; for example, a systematic distribution of physicians throughout the state, and health insurance problems of all kinds. Joint committees will also be appointed to deal with matters pertaining to public welfare in general, such as the campaign against venereal disease, tuberculosis and instruction in hygiene for the insured. Three joint committees will be appointed to take up the question of the economical management of the health insurance societies, and will deal especially with the technic of control in connection with disability, and the mode of prescribing drugs and remedies. These joint committees will also establish joint controlling bodies (bureaus of revision) and will work out general rules and regulations for the control of the Krankenkassen. 4. Joint assemblies will be held whenever it seems desirable. 5. The federation will hold a session whenever either one of the parties composing it makes such a request and states the questions to be considered.

A Psychotechnical Laboratory

At the polytechnic school in Charlottenburg a psychotechnical laboratory has recently been established where psychotechnical testing procedures can be developed and qualification tests performed, and where, furthermore, the various movements involved in industrial performance can be studied from a rational scientific and psychotechnical standpoint. Owing to the great importance that such procedures, as theoretically established by the late Prof. Hugo Münsterberg of Harvard University, have for the determination of an individual's adaptation for a given calling or profession, it may be of interest to American physicians to know something of the methods introduced and the results secured in the Charlottenburg laboratory.

The laboratory has collected a large amount of experience in the field of the metal industries, having tested a considerable number of apprentices as regards their qualifications. On the basis of a thorough knowledge of the industries concerned, such experimental procedures were carefully worked out as would test applicants for apprenticeships in regard to the qualifications especially required for given industries. The indicative or symptomatic value of the various testing procedures is determined on the basis of detailed comparisons between the laboratory findings and the judgment of the industrial school and the workshop. By means of frequency curves the average values for the testing of the various quali-

fications required in a given industry are determined and a classification of the examinees reached. The main purpose of the adaptation test is to obtain a qualification curve of the examinee in order to establish his fundamental capacity, and thus be in a position to direct him to the trade or profession for which he is best qualified. While the finer characterization of the various qualifications by means of instrumental examination is left to the psychologist, as this involves thorough knowledge of workshop conditions, all border-line and pathologic cases are referred to the physician in order that his opinion may be first secured.

The adaptation tests are carried out by means of instruments of precision, by simple testing apparatus and other experimental technical paraphernalia. The senses (if these play an important part in the given industry) are tested as to their acuteness; also the power of attention and concentration, the intellectual functions, talent for technical construction, and the character of the reactions from the standpoint of time, strength and skill, according to their relative importance in various industries. In a certificate the results of the various functional tests are recorded; alongside the character or type of the function is placed a figure respecting the degree of its development in the candidate.

Comparisons between laboratory certificates and workshop practice have shown a satisfactory degree of agreement, and furnish sufficient confirmation of the value of the testing procedures employed. Consequently, numerous industrial works have successfully introduced the same testing procedures. The railway and the postal administrations and various schools are subjecting candidates to similar tests. Not only apprentices are being tested in this manner but also skilled technicians. At present the postal administration is working out testing procedures for telephone operators.

Efficiency experts are also employing laboratory psychotechnical methods in the "expertization" of given industries. The first step is to study the machine and its construction from a psychologic standpoint, as the goal of the psychotechnical examination is to so adapt the technical construction of the machine to the psychophysical organism of the operator as to secure the greatest efficiency from the standpoint of the acquisition of a thorough knowledge of the machine, skill in its operation, and economy of energy by the avoidance of unnecessary fatigue. For example, the typewriter and its appurtenances are studied from these standpoints.

Special attention is given to the study of the question of fatigue. In addition to the physiologic testing of fatigue, the laboratory makes investigations of fatigue on a psychotechnical basis under the actual conditions found in the workshop and factory. By means of an inquiry into the results of fatigue and into the actual variations in performance when rest periods of varying length are inserted in various ways during the work day, and by means of certain other modifications in working conditions, efficiency experts are able to introduce changes that benefit the work and increase the output. The psychotechnical studies on fatigue have for their purpose the exact determination of the particular mode of functioning that enters into a given industrial process, in order that a practical opinion may be secured in regard to the amount of energy required for the performance of various forms of labor.

Marriages

JOHN LESTRANGE ROCK, Eveleth, Minn., to Miss Doris Palmer of Wilmette, Ill., February 7.

GORDON JOEL SAXON, Philadelphia, to Miss Lillian E. Dano of Clayton, N. Y., March 12.

Deaths

Joseph Taber Johnson ✠ Washington, D. C., and Cherrydale, Va.; Georgetown University School of Medicine, Washington, D. C., 1865; Bellevue Hospital Medical College, 1867; aged 75; emeritus professor of gynecology and abdominal surgery, and president of faculty of his alma mater; at one time professor of obstetrics and diseases of women and children in Howard University, Washington; president of the Medical Society of the District of Columbia in 1887; the American Gynecological Society, and Southern Surgical and Gynecological Association in 1898; died, March 12.

Luther M. Halsey ✠ Williamstown, N. J.; Jefferson Medical College, 1880; aged 62; at one time president of the Medical Society of New Jersey, and Gloucester County Medical Society; frequently a delegate from the Medical Society of New Jersey in the House of Delegates of the American Medical Association; a member of the board of governors of the New Jersey State Hospital for the Insane, Trenton; died, March 20, from uremia.

William David Booker, Baltimore; University of Virginia, Charlottesville, 1867; aged 76; a member of the Medical and Chirurgical Faculty of Maryland; a Confederate veteran; emeritus clinical professor of pediatrics in Johns Hopkins University Medical School; one of the founders of the American Pediatric Society; died, March 15, from pneumonia.

Robert Howland Chase, Wyncote, Pa.; University of Pennsylvania, Philadelphia, 1869; aged 75; vice president of the section of psychological medicine of the International Medical Congress; superintendent of the State Hospital for the Insane, Norristown, from 1880 to 1893; died, March 13.

John J. Ligget ✠ Ladiesburg, Md.; University of Maryland, 1869; aged 74; assistant surgeon in the Navy during the Civil War; was found dead, February 17, from a gunshot wound of the head, self-inflicted, it is believed, with suicidal intent, while despondent on account of ill health.

Henry D. Rentschler, Ringtown, Pa.; University of Pennsylvania, Philadelphia, 1864; aged 79; coroner of Schuylkill County for one term; one of the organizers and for twelve years director of the Merchants' National Bank, Ringtown; died, March 4, from senile debility.

Charles Alfred Anderson ✠ Stromsburg, Neb.; State University of Iowa, Iowa City, 1897; aged 51; health officer of Stromsburg and Polk County; vice president of the Nebraska State Medical Association in 1911; died, March 5, from tuberculous meningitis.

Mathew Watson Thornburg ✠ Pasadena, Calif.; Bellevue Hospital Medical College, 1891; aged 61; a practitioner of Redfield, Iowa, for thirty-one years; died in the Methodist Hospital, Des Moines, Iowa, March 14, following an operation for gallstones.

Nathan Joseph Jessup, Detroit; Detroit College of Medicine and Surgery, 1913; aged 33; lieutenant, M. C., U. S. Army, and discharged, June 20, 1919; was found lying in a lot with his skull fractured, March 12, and died a few hours later.

Samuel Prichard Fetter, Ashland, Ky.; Miami Medical College, Cincinnati, 1904; aged 38; at one time president of the board of health of Portsmouth, Ohio, and local surgeon for the Chesapeake and Ohio Railroad; died, March 18.

Bernard Henry Zwart ✠ Kansas City, Mo.; St. Louis Medical College, 1881; aged 61; at one time professor of principles and practice of medicine in the University Medical College, Kansas City; died, February 23.

Bruce Ffoulkes, San Francisco; Cooper Medical College, San Francisco, 1894; aged 47; a member of the Medical Society of the State of California; died, March 5, following an operation for appendicitis.

Wallace H. Dale, Houtzdale, Pa.; College of Physicians and Surgeons, Baltimore, 1895; aged 59; a member of the Medical Society of the State of Pennsylvania; died, March 11, from cerebral embolism.

William Kohlmann ✠ New Orleans; University of Bonn, Germany, 1890; aged 57; house surgeon at Touro Infirmary, and gynecologist to Charity Hospital; died, suddenly, March 21, from heart disease.

Albert C. Crawford, San Francisco; College of Physicians and Surgeons, Baltimore, 1893; aged 51; professor of phar-

✠ Indicates "Fellow" of the American Medical Association.

macology in Leland Stanford Junior University; died, March 14, from pneumonia.

James Milton Steade ✠ San Diego, Calif.; Cincinnati College of Medicine and Surgery, 1894; aged 59; at one time a member of the board of health of San Diego; died, March 4, from heart disease.

George Walter Hochrein ✠ Chicago; Northwestern University Medical School, Chicago, 1906; aged 41; a member of the staff of Mercy Hospital; died in that institution, March 21, from heart disease.

Alfred Hakanson ✠ Chicago; Nebraska School of Medicine, Omaha, 1890; aged 54; laryngologist and rhinologist to Augustana Hospital, Chicago; died in Mobile, Ala., March 23, from pneumonia.

Daniel Vincent Fahey, Brooklyn; Long Island College Hospital, Brooklyn, 1919; aged 29; an intern in St. Catherine's Hospital, Brooklyn; died, February 18, from epidemic encephalitis.

Walter Scott Link ✠ Parkersburg, W. Va.; Baltimore Medical College, 1897; aged 50; lieutenant, M. C., U. S. Army, and discharged, Jan. 20, 1919; died, March 6, from cerebral hemorrhage.

Silas Pierson Leveridge, New York; Bellevue Hospital Medical College, 1879; aged 65; a member of the Medical Society of the State of New York; died, March 16, from pneumonia.

Henry Franklin Sproles ✠ Vicksburg, Miss.; Louisville (Ky.) Medical College, 1904; aged 42; captain, M. C., U. S. Army, and discharged, June 24, 1919; died, March 17, from carcinoma.

Lewis C. Carrico, Bryantown, Md.; University of Maryland, Baltimore, 1885; aged 60; a member of the Medical and Chirurgical Faculty of Maryland; died, March 14, from heart disease.

Julius Columbus Egeberg, San Francisco; Cooper Medical College, San Francisco, 1905; a member of the Medical Society of the State of California; died, March 9, from peritonitis.

Bartlett L. Paine, Lincoln, Neb.; Medical College of Ohio, Cincinnati, 1875; Hahnemann Medical College of Philadelphia, 1877; aged 69; died, March 13, from cerebral hemorrhage.

John McCrimmon, Kincardine, Ont.; McGill University, Montreal, 1878; L.R.C.P., L.R.C.S. (Edin.), L.R.F.P. and S. (Glas.), 1878; aged 65; died, February 13, from pneumonia.

Charles Robert McCrory, Chicago; University of Illinois College of Physicians and Surgeons, Chicago, 1919; aged 32; died, January 21, while undergoing operation on the hand.

Daniel P. Whitley, Albemarle, N. C.; University of Maryland, Baltimore, 1889; aged 54; a member of the Medical Society of the State of North Carolina; died, March 7.

Norman Mackintosh, Gunnison, Colo.; Bellevue Hospital Medical College, 1879; aged 62; at one time president of the Passaic County (N. J.) Medical Society; died, March 9.

Henry Lee Sweeny ✠ Kingston, N. H.; Harvard University Medical School, 1882; aged 62; at one time a member of the local school board; died, March 11, from pneumonia.

Joseph Conn ✠ New Orleans; Tulane University, New Orleans, 1897; aged 50; physician at Touro Infirmary, New Orleans; died suddenly, March 4, from heart disease.

Edward P. McDevitt ✠ Baltimore; University of Maryland, Baltimore, 1875; aged 66; a practitioner of Baltimore for forty-six years; died, March 8, from heart disease.

August F. Meisch ✠ Manchester, Mo. (license, Missouri, 1883); aged 70; a practitioner of Manchester for nearly half a century; died, March 2, from arteriosclerosis.

Horace Plummer Wilson ✠ Whittier, Calif.; Chicago Medical College, 1896; aged 49; captain, M. C., U. S. Army, and discharged, June 20, 1919; died, March 4.

Carl H. Lowell Andersen, Chicago; John A. Creighton Medical College, Omaha, 1896; aged 53; died at Tucson, Ariz., March 16, from pulmonary tuberculosis.

Peter P. Van Vleet, Stamford, Conn.; Bellevue Hospital Medical College, 1869; aged 73; a member of the Connecticut State Medical Society; died, March 12.

Haydon Rochester, San Francisco; University and Bellevue Hospital Medical College, 1902; aged 41; died, March 12, from an accidental crushing injury.

Alfred Bennison Atherton, San Diego, Calif.; Harvard University Medical School, 1866; L.R.C.P., L.R.C.S. (Edin.), 1867; aged 77; died, March 7.

Rudolph Menger, San Antonio, Texas; University of Leipzig, Germany, 1874; aged 69; formerly city physician of San Antonio; died March 15.

Andrew Thomas Rice, Selkirk, Manit.; Victoria University, Cobourg, Ont., 1884; aged 64; died in the General Hospital, Winnipeg, February 13.

Daniel F. Callinan, Veterans Home, Calif.; Columbus (Ohio) Medical College, 1891; aged 53; died, March 8, from pulmonary tuberculosis.

George Hastings Close ✠ New York; University and Bellevue Hospital Medical College, 1899; aged 48; died, March 11, from pneumonia.

Wayland Dewees Roberts, Brazils, Ark. (license, Arkansas, 1903); aged 63; died in St. Vincent's infirmary, Little Rock, Ark., February 17.

John George McCarthy, Montreal, Que.; McGill University, Montreal, 1888; aged 58; died in New York, March 13, from angina pectoris.

Howard M. Kemp ✠ Bloomington, Md.; University of Maryland, Baltimore, 1881; aged 64; died, March 14, from heart disease.

Charles H. Parsons, Rushville, Ind.; Bellevue Hospital Medical College, 1878; aged 66; died, March 5, from cerebral hemorrhage.

Henry Warren Hawley, Cincinnati; Pulte Medical College, Cincinnati, 1880; aged 67; died, March 8, from cerebral hemorrhage.

George T. Row ✠ Circleville, Ohio; University of Maryland, Baltimore, 1877; aged 74; died, March 7, from bronchopneumonia.

Henry M. Farr, Mount Pleasant, Iowa; Castleton (Vt.) Medical College, 1855; aged 92; died, March 3, from senile debility.

Jost Durst Kramer ✠ Dayton, Ohio; University of Pennsylvania, Philadelphia, 1902; aged 41; died, March 16, from diabetes.

Alpheus B. Fitch ✠ Factoryville, Pa.; University of Michigan, Ann Arbor, 1881; aged 69; died, February 24, from pneumonia.

James D. DeWitt, Easton, Pa.; University of the City of New York, 1849; aged 94; died, March 4, from senile debility.

Peter Martin Van Den Berg, Grand Haven, Mich.; University of Michigan, Ann Arbor, 1894; aged 50; died, March 2.

James M. Page, Chicago (license, Illinois, years of practice, 1887); aged 91; a veteran of the Civil War; died, March 8.

Charles Curtis Lambert, Clinton, Iowa; Baltimore University School of Medicine, 1901; aged 45; died, March 3.

Marion G. McBride, Ravenna, Ohio; Homeopathic Hospital College, Cleveland, 1883; aged 62; died, February 20.

John Donald Langham, Minitonas, Manit.; University of Manitoba, Winnipeg, 1916; aged 27; died, February 4.

Augustus Walter Turner, Boston; College of Physicians and Surgeons, Boston, 1887; aged 65; died, March 10.

Frank E. Stevens ✠ Bristol, Wis.; Chicago Medical College, 1879; aged 69; died, March 5, from heart disease.

George E. Squier, Brookville, Ind.; Eclectic Medical Institute, Cincinnati, 1882; aged 76; died, February 28.

Reginald Stonestreet ✠ Nashville, Tenn.; University of Nashville, Tenn., 1891; aged 56; died, March 14.

Charles T. Waage, Pennsburg, Pa.; Jefferson Medical College, Philadelphia, 1849; aged 93; died, March 7.

Charles Arthur Ellis ✠ Denver; University of Buffalo, 1891; aged 52; died, March 7, from pneumonia.

Joseph H. Webb, Waterloo, Ont.; Victoria University, Cobourg, Ont., 1869; aged 74; died, January 26.

Harry I. Sherwood, Elnora, Ind.; Missouri Medical College, St. Louis, 1890; died in Florida, February 20.

Mildred Lusk Oliver, Money, Miss.; Tulane University, New Orleans, 1914; aged 34; died, March 7.

Samuel D. Webb, McComb, Miss. (license, Mississippi, years of practice); aged 86; died, March 8.

Joseph T. Bills, Raton, N. M.; American Medical College, St. Louis, 1884; aged 65; died, March 9.

Lawrence Kenny, Troy, N. Y.; Albany (N. Y.) Medical College, 1881; aged 62; died, March 6.

Arthur G. Hobbs, Atlanta, Ga.; University of Louisville, Ky., 1877; aged 67; died, March 9.

Erwin W. Witt ✠ Brownville, N. Y.; University of Buffalo, 1897; died, January 7.

The Propaganda for Reform

In This Department Appear Reports of The Journal's Bureau of Investigation, of the Council on Pharmacy and Chemistry and of the Association Laboratory, Together with Other General Material of an Informative Nature

DIGIFOLIN-CIBA NOT ADMITTED TO N. N. R.

Report of the Council on Pharmacy and Chemistry

The Council has authorized the publication of the following report, declaring Digifolin-Ciba inadmissible to New and Nonofficial Remedies. W. A. Puckner, Secretary.

Digifolin-Ciba is a product of the Society of Chemical Industry of Basle, Switzerland. It is marketed in the United States by the Ciba Company, 91 Barclay Street, New York City. It is claimed that Digifolin-Ciba is "a preparation of digitalis leaves that has been freed from their useless and harmful principles such as Digitonin (saponin), coloring and inert matter, etc., but does contain all the really valuable, therapeutically active constituents of the leaves, namely; digitoxin and digitalein in their natural proportions." There is no evidence that digifolin contains all of the glucosides of digitalis as they exist in the leaf, and it is extremely improbable that this is the case because one cannot remove saponin without altering the other active principles of digitalis.

The Ciba Company sends out the following pamphlets relating to Digifolin:

"'Concerning Digifolin-Ciba, A New Preparation of Digitalis,' by C. Hartung, M.D., Ph.D. Extracts from the work 'Ueber Digifolin, Ein Neues Digitalis-Praeparat' in the *Munich Medical Weekly*, No. 36, page 1944, 1912."

"'Digitoxin Contents of Digifolin-Ciba,' by C. Hartung, M.D., Ph.D., Basle, Switzerland. Reprints from the *Pharmaceutical Post*, 1913. No. 34, page 357. No. 40, page 431."

"'Pharmacological Tests of Digitalis,' by M. J. Chevalier Chef Des Travaux Pratiques de Pharmacologie et Matiere Medicale, Faculte De Medecine De Paris. Report Presented to the Societe de Therapeutique at their Meeting, May 28, 1913."

In the reprint "Concerning Digifolin, 'Ciba,'" Hartung lays stress on the presence of harmful and inert substances present in the leaf and galenical preparations with the direct or implied statement that digifolin has an advantage in that these are absent from it. This is misleading. It is true that Boehm, whom Hartung cites, found saponin to be irritating, but Boehm states that it required 100 mg. per kilogram of body weight to induce vomiting after its oral administration. Furthermore, saponin is present in traces only in infusion of digitalis, so that the therapeutic dose contains a wholly negligible amount of it.

The following occurs in "Pharmacological Tests of Digitalis," by M. J. Chevalier:

"Hartung's Digifolin merits our attention, especially because it seems to possess all the pharmacodynamic properties of galenic preparations of digitalis without showing any of their disadvantages."

This claim scarcely needs comment, since it is well established that the chief "disadvantages" of digitalis are inherent in the principles which produce the desired effects of digitalis and may be avoided to a large extent by a carefully regulated dosage of any digitalis preparation. In short, the advertising for Digifolin asserts that this digitalis preparation has all the advantages of digitalis itself, but none of its disadvantages. This claim has been refuted so frequently that manufacturers must be aware that it is untenable. Further the claims now made for Digifolin are essentially those made nearly four years ago at which time the attention of the American agent was called to their unwarranted character.

The Council declared Digifolin-Ciba inadmissible to New and Nonofficial Remedies because the therapeutic claims advanced for it are misleading and unwarranted.

Public Health Motto.—The health departments of New York City and of New York state have taken as their motto "Public health is purchasable. Within natural limitations, a community can determine its own death rate."

Correspondence

"THE MEDICAL TREATMENT OF GASTRIC ULCER"

To the Editor:—The editorial on this subject (The Journal, March 12, 1921, p. 726) proved extremely interesting. I observed with some surprise the comments on Coleman's "new" method of treatment. I enclose a reprint of a paper presented by me before the American Gastro-Enterological Association at its Washington meeting, May 8, 1916. Practically all of Coleman's "discovery" has been fully covered in my previous paper (*Am. J. M. Sc.* **153**:547 [April] 1917).

I am glad to note that your editorial hints that the modern treatment of gastric ulcer is not merely the treatment of the local gastric defect, or a treatment which can be applied blanket-wise to a great group of patients. The best opinion is that the nonsurgical treatment of gastric ulcer is an intensely individual regimen. Unless the ulcer is treated from the standpoint of its etiology as the local manifestation consequent on a wide variety of infectious traumatic, circulatory or constitutional upsets, permanent healing of ulcers cannot be expected. These facts were emphasized in my address as chairman before the Section on Gastro-Enterology and Proctology at the New Orleans Session of the American Medical Association last year (The Journal, June 5, 1920, p. 1555).

Frank Smithies, M.D., Chicago.

To the Editor:—May I venture to take issue with one of the statements made in the editorial, "The Medical Treatment of Gastric Ulcer"? I read the editorials in The Journal with a great deal of profit and pleasure, but I feel that the statement that the object of medical treatment of gastric ulcer is to counteract "the irritating or corrosive action of acid gastric contents on ulcers that would tend to heal spontaneously" is rather misleading.

It is, of course, true that the normal physiologic condition of the gastric juice is distinctly acid, and that tissues heal best, other things being equal, in their normal physiologic environment. A stomach wound, if sutured properly, heals perfectly. Certainly, no one would think of changing the normal acid reaction of the urine in the presence of a lesion in the bladder with the idea of promoting healing by lessening the corrosive action of the acid urine on the lesion. On the contrary, we know that bladder wounds heal best when the urine is normally acid; likewise, lesions in the mouth heal better when the saliva is normally alkaline. It seems to me that the beneficial effect of such a treatment as the Sippy treatment is, not that it directly benefits the ulcer by rendering the gastric contents continuously alkaline or even neutral (which with normal secretion would be difficult, if not impossible), but that by reducing the acidity of the gastric juice it lessens peristalsis. As a rule, excessive acidity of the gastric juice increases peristalsis, and the increased motion of peristalsis prevents healing. It is the same old principle that Hilton laid down many years ago, but which is too often neglected; that is, the principle of securing physiologic rest. If physiologic rest of the stomach could be attained without changing the reaction of the gastric contents, the same beneficent result should occur. In the bladder or in the mouth, the reaction of the normal secretion in these regions has nothing to do with the physiologic rest, so that a change from the normal reaction is usually detrimental to healing. In the stomach, however, the lowering of the acidity means more rest for the stomach walls, and this rest does more good than the unphysiologic reaction of the gastric juice with its lowered acidity does harm.

J. Shelton Horsley, M.D., Richmond, Va.

"THE NECESSITY OF CLEAR THINKING IN MILK MODIFICATION"

To the Editor:—A recent paper in THE JOURNAL (March 5, 1921, p. 633) is predicated on two undeniable postulates: (1) "A considerable portion of the work of the general practitioner consists in infant feeding." (2) "A large proportion of the babies in this country are fed under the advice of general practitioners." Ergo: "It is vital for every general practitioner to have a good working knowledge of infant feeding."

The author then outlines what he considers the irreducible minimum required of any one who would treat babies intelligently. Whether this irreducible minimum (which is a restatement, in very able form, of the percentage feeding technic, with its arithmetic and its tables) will hearten any of the burdened men who, as he says, "become discouraged with the subject, lose interest in it, and give it little attention," is a debatable question.

I have long realized the truth of these two postulates, and of their conclusion. As one who has realized keenly, as well, the discouragement attendant on the attempt to apply these principles in general practice, I take the liberty of setting forth an alternative set of general principles which I believe constitutes a better equipment for any man who treats infants, be he pediatrician, orthopedist or (best beloved of the Lord, since He has created so many of them) general practitioner.

1. A general working knowledge of how to keep a nursing child on the breast until he is old enough to be weaned—from choice, and not from necessity. With the cooperation on the part of his mothers that any man can command (for mothers will meet him more than half way in such an attempt), this result can be obtained in well over 90 per cent. of cases. The necessary technic may be learned from a study of recent contributions to the literature by:

Huenekens, E. J.: Care of the New-Born, *Northwest Med.* **18**: 149 (Aug.) 1919.
Pearce, N. O.: Review of Recent Literature on the New-Born, *Am. J. Dis. Child.* **18**: 51 (July) 1919.
Griffith, J. P. C.: Establishment and Maintenance of Breast Feeding, *Arch. Pediat.* **35**: 597 (Oct.) 1918.
Sedgwick, J. P.: Establishment, Maintenance and Reinstitution of Breast Feeding, THE JOURNAL, Aug. 11, 1917, p. 417.
Richardson, F. H.: Simplified Infant Feeding and the Breast: A Rational Feeding Program for the First Year of Life, *New York M. J.* **112**: 977, 1920.
Abt., I. A.: Facts and Fallacies About Breast Feeding, *St. Paul M. J.*, April, 1915.
Ramsay, W. R.: Care and Feeding of Infants and Children, Lippincott's Nursing Manuals, Ed. 2, 1920.

2. An ability to carry on complemental, as opposed to supplemental feeding, as long as may be necessary.

3. A realization that, in spite of all that has been said on the subject, it is virtually impossible to overfeed a baby on breast milk or a reasonably appropriate milk mixture, provided an interval of not less than three hours is maintained. If any one doubts this, let him sit down by the side of the mother of any baby he chooses, and see how much he can get that baby to take, from either bottle or breast, when the baby has decided that he is through. It cannot be done—ask any mother.

4. A reasonable familiarity with *one* method of feeding. Let that for choice be boiled simple milk dilutions, with dextrimaltose gradually added, in a few days, up to the maximum of four level tablespoonfuls for the child under 10 pounds, and six for the child over 10 pounds. Such a familiarity may be obtained from Dennett's work (Simplified Infant Feeding, New York, 1920).

5. A knowledge of the fact that milk never disappears from the human breast overnight—that the disappearance of milk from the lactating breast is a matter rather of weeks than of hours. Further, that it can readily be brought back after a month of weaning; and often, though with much striving against popular psychology, which is all against one in such an attempt, after two or three times that length of time (Moore, C. U.: Reestablishment and Developing of Breast Milk, *Arch. Pediat.* **36**:609 [Dec.] 1919).

6. A willingness to reduce directions to the simplest terms, written down for the mother and read over and discussed with her, so that the physician may be sure she understands them perfectly. The average mother is no fool, especially when the good of her own baby is concerned. If some reasonably simple method is explained with reasonable clearness, no anxiety need be experienced on this score.

7. An open-minded attitude toward dry milk, as something to fall back on as an auxiliary in carrying out the foregoing program (Dennett, Hess and others).

8. Afterthought: Not necessary, perhaps, but highly desirable, and hardly too much to ask of one interested in his babies, is a certain "teachableness" of a sort that makes a man willing to sit down occasionally by the side of a nursing mother—the keenest observer in the world, where her own baby is concerned—and learn of her as he helps her in her daily task of adjusting breast to baby and baby to breast. He will thus accomplish three things that are greatly to be desired. (*a*) He will help two of his patients who are most deserving of any help he may be so fortunate as to be able to extend to them; (*b*) he will learn, in the best way that one can learn anything, namely, by close personal observation under the best teacher procurable, and (*c*) last but by no means least, he will be able to add something to our present-day inadequate knowledge of the physiology of the nursing child and the lactating mother, and so aid, if only in a small degree, in the advancement of the science as well as the art of infant feeding (Richardson, F. H.: The Nursing Mother: A Study in Lactation, to be read before the New York State Medical Society, May, 1921; The Breast and the Nursing Child, to be read before the Section on Diseases of Children at the Boston session in June).

I submit the eight requirements just set down as constituting not only a minimum, but an easily attainable optimum, for any man dealing with babies. I will further confidently advance the opinion that the possessor of the foregoing set of requirements will not frequently find it necessary to call for help from the pediatrician in the feeding of his babies. The patient that fails to thrive with him will be a genuine problem for the specialist in the diseases of children.

F. H. RICHARDSON, M.D., Brooklyn.

"SUGGESTIONS FOR IDENTIFICATION OF BLOOD GROUPS"

To the Editor:—Since the publication of my article on this subject in THE JOURNAL (March 12, 1921, p. 724), I have received letters from Dr. Karsner and Dr. W. C. Williams of the Army Medical School calling my attention to the fact that in my article the Jansky grouping was presented as a complete reversal of the Moss, while the report of the committee appearing in THE JOURNAL, January 8, specified that only Groups I and IV were to be transposed, while Groups II and III remained the same. My article, which copied Dr. Karsner's table of group incidence (THE JOURNAL, Jan. 8, 1921, p. 88) also followed his presentation of the Jansky grouping as a complete reversal. Dr. Karsner's error was called to his attention by Dr. Williams, and Dr. Karsner corrected his article by a communication to THE JOURNAL, Jan. 22. It is much to be regretted that I did not see Dr. Karsner's correction and that my article perpetuated his error, thus adding to the confusion.

This correction will, of course, make some difference in the use of Chart 3 of my article in that the next step after trying Serum I will be the use of Serum II instead of Serum III,

and that the result being "no agglutination" will indicate Group II, while the result being "agglutination" will indicate the trial of Serum III.

ROBERT W. BELKNAP, M.D., Cambridge, Mass.

"BLACK SPIDER POISONING"

To the Editor:—I have read with interest, the article by Dr. D. J. Louis on black spider poisoning (THE JOURNAL, Jan. 8, 1921, p. 99) because of my own experience. The spider that I have known as a poisonous one is found in many places in southwest Texas and northern Mexico. It is small and black, with a white cross on the back. The bite is distinctly painful and produces swelling. The spot bitten is generally so small that it is hardly noticeable the next day. After the first hour there is no noticeable local symptom, but within a short time after the bite there is intense pain in the chest, palpitation of the heart, and difficulty in breathing. I was the victim of such a bite, and I have seldom had more severe pain. I have never thought myself in more danger of death than I did during the two days when I was ill, during which I felt it necessary to take nearly a grain of morphin with atropin. None of my other cases seemed as severe as was my own but several patients were quite sick for two days.

T. J. TURPIN, M.D., Esmeralda, Coahuila, Mexico.
Surgeon, Sierra Mojada Mines.

PRIORITY IN THE USE OF SPINAL DRAINAGE

To the Editor:—In our article on "Relative Effectiveness of Various Forms of Treatment in Neurosyphilis" (THE JOURNAL, March 12, 1921), we credited Gilpin and Earley with priority in the use of spinal drainage. The application of spinal drainage to the treatment of cerebrospinal syphilis was described by Dr. G. C. Fisher of Chicago in the *Illinois Medical Journal*, May, 1915.

JOHN H. STOKES, M.D.,
EARL D. OSBORNE, M.D.,
Rochester, Minn.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted on request.

MICROCHEMICAL METHOD FOR ANALYSIS OF GLUCOSE IN BLOOD

To the Editor:—Please tell me where I can get an article describing Bang's micromethod of blood analysis. Please omit my name.

J. C. B., Iowa

ANSWER.—The microchemical method for the analysis of glucose in the blood was first described by Bang in his publication "Der Blutzucker," Wiesbaden, 1913. Later he described the method with some modifications in the *Biochemische Zeitschrift* (**49**:1; **57**:301, 1913). A criticism of the method appeared in the *Journal of Biological Chemistry* **22**:525, 1915. A working description of the method may be found in "Physiological Chemistry" by A. P. Mathews, Edition 3, Philadelphia, William Wood & Co., 1920, pp. 1112,

Clinical Training.—The physician who would undertake the investigation of the early stages of disease must not only be a man of very wide experience, but must have trained himself to observe on lines that have hitherto received little attention. The training, among other things, must have included the watching of patients for long periods to see the outcome of the complaint.—J. MacKenzie, *Brit. M. J.* **1**:109 (Jan. 24) 1920.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ARIZONA: Phoenix, April 5-6. Sec., Dr. Ancil Martin, 207 Goodrich Bldg., Phoenix.

ARKANSAS: Little Rock, May 10. Sec., Reg. Bd., Dr. T. J. Stout, Brinkley. Sec., Eclectic Bd., Dr. C. E. Laws, 803½ Garrison Ave., Fort Smith.

COLORADO: Denver, April 5. Sec., Dr. David A. Strickler, 612 Empire Bldg., Denver.

DISTRICT OF COLUMBIA: Washington, April 12. Sec., Dr. Edgar P. Copeland, 1315 Rhode Island Ave., Washington.

HAWAII: Honolulu, April 11. Sec., Dr. Guy C. Milnor, 401 S. Beretania St., Honolulu.

IDAHO: Boise, April 5. Director, Mr. Paul Davis, Boise.

IOWA: Des Moines, April 12-14. Sec., Dr. Guilford H. Sumner, State House, Des Moines.

KENTUCKY: Louisville, May 10. Sec., Dr. A. T. McCormack, Sixth and Main Sts., Louisville.

LOUISIANA: New Orleans, May 3. Sec., Dr. F. H. Hardenstein, 702 Macheca Bldg., New Orleans.

MINNESOTA: Minneapolis, April 5-7. Sec., Dr. Thomas S. McDavitt, Lowry Bldg., St. Paul.

MONTANA: Helena, April 12. Sec., Dr. S. A. Cooney, Power Bldg., Helena.

NEVADA: Carson City, May 2. Sec., Dr. S. L. Lee, Carson City.

NEW MEXICO: Santa Fe, April 11-12. Sec., Dr. R. E. McBride, Las Cruces.

OKLAHOMA: Oklahoma City, April 12-13. Sec., Dr. J. M. Byrum, Shawnee.

PORTO RICO: San Juan, April 5. Sec., Dr. Manuel Quevedo Baez, San Juan.

RHODE ISLAND: Providence, April 7-8. Sec., Dr. Byron U. Richards, State House, Providence.

UTAH: Salt Lake City, April 4-5. Sec., Dr. C. L. Olsen, 932 South 5th East St., Salt Lake City.

Michigan October Examination

Dr. Beverly D. Harison, secretary, Michigan State Board of Registration in Medicine, reports the written examination held at Lansing, Oct. 12-14, 1920. The examination covered 14 subjects and included 100 questions. An average of 75 per cent. was required to pass. Of the 14 candidates examined, 12 passed and 2 failed. One hundred and sixteen candidates were licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Georgetown University		(1920)	85, 85.6
Chicago College of Medicine and Surgery		(1917)	74.8, 75.9, 79.1, 82.1, 82.3
Loyola University		(1918)	75.7, 78.6
Albany Medical College		(1919)	82.8
New York Medical College and Hospital for Women		(1917)	82
University of Toronto		(1905)	81
	FAILED		
Chicago Coll. of Medicine and Surgery		(1916) 73.6, (1917)	73.1

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Birmingham Medical College		(1915)	Tennessee
University of Arkansas		(1915)	Arkansas
Columbian University		(1904)	Dist. Colum.
Howard University		(1907) Illinois, (1912)	W. Virginia
Atlanta Medical College		(1915)	Georgia
Bennett College of Eclectic Medicine and Surgery		(1898)	Ohio
Chicago College of Medicine and Surgery		(1913)	Minnesota
American Medical Missionary College, Chicago		(1901)	Ohio
Northwestern University		(1920, 4)	Illinois
Rush Medical College		(1898) Illinois, (1908) (1914)	Wisconsin
University of Illinois	California, (1917, 2), (1919) Illinois	(1915), (1916), (1919)	Illinois
Indiana University School of Medicine		(1918), (1919)	Indiana
College of Physicians and Surgeons, Keokuk		(1882)	Iowa
State University of Iowa College of Medicine,		(1902)	Wisconsin
Hospital College of Medicine, Louisville	(1913), (1919) Iowa	(1892)	Indiana
Kentucky School of Medicine of Louisville		(1891)	Illinois
Louisville Medical College	(1892) Indiana, (1892) Pennsylvania, (1894) Ohio	(1890) Kentucky, (1893)	Missouri
University of Louisville		(1909) Kentucky, (1911, 2)	Indiana
College of Physicians and Surgeons, Baltimore	(1913) West Virginia	(1910)	W. Virginia
Johns Hopkins Univ.	(1914) Maryland	(1900)* Philippine Islands, (1910)	Ohio
Maryland Medical College	(1914) Wisconsin, (1918) Ohio, (1919, 2) Maryland	(1903)	Maryland
Harvard University		(1898)	Mass.
Tufts College Medical School		(1906) Tennessee, (1911)	Maine
Detroit College of Medicine	(1919) Massachusetts	(1889)	Illinois
University of Michigan Medical School		(1871)	Nebraska
University of Minnesota Medical School	(1897) Illinois	(1919)	Minnesota
Barnes Medical College		(1893)	Indiana
St. Louis University School of Medicine		(1906)	Illinois
Washington University Medical School	(1917) Missouri	(1919)	Missouri
Albany Medical College		(1913)	New York
Bellevue Hospital Medical College		(1894)	Ohio

Columbia University	(1907), (1909), (1918)	New York
Long Island College Hospital	(1902)	New York
New York Homeo. Med. Coll. and Flower Hospital	(1912) (1919)	Penna. Delaware
University and Bellevue Hospital Medical College	(1917)	New York
University of Buffalo	(1913), (1914), (1917), (1919)	New York
Syracuse University College of Medicine	(1914)	New York
Leonard Medical School	(1901)	Alabama
Cleveland College of Physicians and Surgeons	(1897)	Ohio
Medical College of Ohio	(1902), (1909)	Ohio
Ohio State University College of Med.	(1917), (1918, 2)	Ohio
Starling Medical College	(1902), (1906)	Ohio
University of Cincinnati	(1917)	Ohio
Western Reserve University	(1916), (1917), (1918, 2)	Ohio
Jefferson Medical College	(1906)	Mass.
Medico-Chirurgical College of Philadelphia	(1916)	New Jersey
University of Pennsylvania	(1905), (1912) (1916) North Carolina, (1918) California	Penna.
Meharry Medical College	(1899) Georgia, (1914), (1918) (1919) Kentucky, (1920, 3) Tennessee	Tennessee
University of Tennessee	(1894)	Kentucky
Vanderbilt University	(1912) Tennessee, (1914) (1915), (1916), (1918) Tennessee	Kentucky
Medical College of Virginia	(1914), (1915)	Virginia
University of Heidelberg	(1892)	Illinois
National University, Athens	(1899)† Ohio, (1905)†	Minnesota
Manitoba Medical College	(1906)	New York
Queen's University Faculty of Medicine	(1914)	Illinois
University of Toronto	(1904)	New York

* Previous license not verified.
† Graduation not verified.

Florida December Examination

Dr. William M. Rowlett, secretary, Florida State Board of Medical Examiners, reports the written examination held at Gainesville, Dec. 6-7, 1920. The examination covered 7 subjects and included 70 questions. An average of 75 per cent. was required to pass. Of the 35 candidates examined, 33 passed and 2 failed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
University of Alabama		(1911)	86
Howard University		(1919)	84.8
Atlanta College of Physicians and Surgeons		(1911)	87.8
Atlanta Medical College		(1916) 86.2, (1917)	85
Emory University		(1919)	84
American Medical Missionary College		(1902)	85.2
Rush Medical College		(1910) 86.1, (1911)	93.5
Northwestern University		(1892)	75
Medical College of Indiana		(1888)	76.5
Louisville Medical College		(1906)	89.2
College of Physicians and Surgeons, Baltimore		(1885)	82.5
Harvard University		(1888) 87.5, (1903)	85.1
Marion-Sims College of Medicine, St. Louis		(1892)	75
Albany Medical College		(1916)	81.2
Bellevue Hospital Medical College		(1890) 84.8, (1894)	86.2
Columbia Univ.		(1904) 80.1, (1907) 84.1, (1909) 82.4, (1918)	91.1
Medical College of Ohio		(1889)	76
Medico-Chirurgical College of Philadelphia		(1905)	79.5
University of Pennsylvania		(1888) 81.2, (1894) 75, (1905)	85.7
Medical College of the State of South Carolina		(1912)	84.5
Memphis Hospital Medical College		(1903)	86.2
University of Vermont		(1895) 85, (1899)	85.7
University College of Medicine, Richmond		(1908)	86
	FAILED		
University of Arkansas		(1907)	70.4
Memphis Hospital Medical College		(1913)	73.7

Indiana Reciprocity Report

Dr. W. T. Gott, secretary, Indiana State Board of Medical Registration and Examination, reports that 51 candidates, including 3 osteopaths, were licensed by reciprocity from July 1 to Dec. 31, 1920. The following colleges were represented:

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
George Washington University		(1902)	Dist. Columbia
Bennett Medical College		(1913)	Illinois
Chicago Coll. of Medicine and Surgery		(1916, 2), (1917, 2)	Illinois
College of Physicians and Surgeons, Chicago		(1906)	Illinois
Hahnemann Medical Coll. and Hospital of Chicago		(1903)	Illinois
Illinois Medical College		(1908)	Iowa
Loyola University		(1918), (1919)	Illinois
Northwestern University		(1906) (1907), (1912), (1914), (1917) Illinois	Wisconsin
Rush Medical College		(1890) Illinois, (1899) (1902), (1916, 2), (1920, 2) Illinois	Iowa
University of Illinois		(1913, 2), (1916)	Illinois
Indiana University		(1919)	Illinois
Kentucky School of Medicine, Louisville		(1898)	Kentucky
Louisville Medical College		(1906)	W. Virginia
University of Louisville		(1888) Kentucky, (1899) (1905) Illinois, (1911) Kentucky	Kentucky
Johns Hopkins University		(1916)	Maryland
University of Michigan Medical School		(1903)	N. Dakota
University of Minnesota		(1913)	Minnesota
Barnes Medical College		(1898), (1905)	Missouri
Marion-Sims College of Medicine, St. Louis		(1899)	Illinois
Albany Medical College		(1908) New York, (1915)	New Jersey
University and Bellevue Hospital Medical College		(1910)	New York
Leonard Medical School		(1908)	Mississippi
Starling Medical College		(1894)	Illinois
University of Pennsylvania		(1909) Pennsylvania, (1915)	Michigan
Meharry Medical College		(1917)	Tennessee
National University, Athens		(1909)	Illinois

Miscellany

DEATHS DUE TO ACCIDENTS AMONG CHILDREN

According to the Census Bureau, accidents cause a larger portion of deaths under 14 than in any other period of life. According to the report, at least 20,000 children are killed in the United States by accidents each year. Out of every 1,000 children's deaths at the ages 5 to 9, 167 are due to accidents, and from 10 to 14, 177 out of each 1,000 deaths are due to accidental causes. This is a greater mortality than the combined mortality of measles, scarlet fever, whooping cough or diphtheria. In 1917, accidents caused 17.7 per cent. of all the deaths among children under 14, while epidemics were responsible for only 17 per cent. of the deaths among children of the same age. Although tuberculosis is generally regarded as one of the leading causes of death in childhood, it caused only 8.5 per cent. of the deaths between the ages of 5 and 9, while accidents caused 16.7 per cent. In the age period from 10 to 14, tuberculosis caused 14.2 per cent. of the deaths, and accidents 17.7 per cent. The principal forms of accidents were burns, falls, automobile and other vehicular accidents, accidental drowning and poisoning. More than 4,500 children under 15 were killed by vehicular accidents in 1917. These figures, compiled from the 1917 Census Bureau Report, are published by the First Aid Bureau of the American Red Cross as justification for its campaign for the prevention of accidents. This campaign is being carried on, both by the education of the public in the use of safety appliances and methods for the prevention of accidents, and by instruction in first aid to the injured. The first aid courses have been introduced into many of the public schools, and there is a constantly increasing demand for them. Certainly all methods by which this heavy and largely avoidable toll of child life can be reduced should be encouraged.

RECOMMENDATIONS ON HEALTH PROVISIONS FOR CHILDREN

The advisory committee of the National Child Health Council on health provisions for laws relating to children, in its report to the children's code commissions, emphasizes the need for legislation by all the states adequately to provide for the care of the health of mothers and children. In general, its recommendations are along the line of the provisions for the public protection of maternity and infancy contained in the Sheppard-Towner bill.

The committee advocates a bureau of child hygiene in each state, in which should be invested the administration of all laws affecting the health of children except those properly belonging to other state agencies.

It recommends that all public and private institutions, agencies, courts, and boarding homes caring for dependent, defective or delinquent children be required by law to have adequate health supervision over their work and wards, subject to the regulations of the health authorities, and, finally, that "all measures dealing with appropriation and expenditure of funds for material relief in connection with child or maternity care should specifically make provision for adequate care of the health."

Attention is directed to specific needs for legislative enactment. When existing legislative restrictions in some states make it impossible to enact laws providing adequate appropriation for the care of the health of mothers and children, these restrictions should be removed. The law should make definite provision for prenatal health centers and clinics, and for the education, protection and health supervision of mothers in industry.

CARE AT BIRTH

In order that only qualified persons should practice midwifery, state laws should require all midwives to be licensed by the state health department, which should have supervisory power to enforce regulations and revoke licenses. Educational training for midwives and obstetric attendants should

be permitted only under proper educational and health supervision.

State health departments should be given authority to require immediate reporting of all inflammatory conditions of the eyes of the new-born and their treatment at birth, and to furnish prophylactic for this purpose, to prevent blindness.

Births should be reported by the professional attendant, not later than three days, to the local registrar of vital statistics, who should be under the health department. Reporting of stillbirths is important.

Institutions giving care to mothers during or near confinement should be licensed, subject to periodic inspection of health authorities.

INFANT AND PRENATAL CARE

Restrictions should be removed and definite laws enacted for adequate protection and promotion of the health of infants from birth to the beginning of school age for the purpose of developing health habits through supervised physical activities and practical instruction in hygiene, nutrition and sanitation. Provision should be made for cooperation between state and local communities in the promotion of health education, and for the instruction and training of all teachers in the fundamental principles of health education.

State laws should make it possible for counties, municipalities and townships to provide for the periodic physical examination of schoolchildren, and the proper state authorities should be empowered to promote the development of such facilities. Health supervision of schoolchildren should be closely correlated with that of babies and preschool children. When special groups are unable to receive adequate education and health supervision, special instruction should be provided.

Schoolhouses and their environment should be regularly inspected and supervised as to sanitary conditions, subject to regulation of the health authorities.

CHILDREN IN INDUSTRY

Every child should have health education and supervision as long as he is of school age. "Physical examination should be given when he leaves school to go to work, at each change of occupation, and periodically thereafter while he is of school age."

PENAL REFORM

A report recently issued by the prison authorities of Great Britain contains much of medical interest. On the subject of penal reform it is remarked that the opinion has been growing for some years that mental and physical disabilities may largely contribute to the commission of crime and that it is the duty of the community to investigate thoroughly such causes and, when they exist, to determine whether they are beyond the ability of the individual to control, whether they do not limit, wholly or in part, responsibility for the commission of the offense, to what extent they should be taken into account in determining the question of punishment, and whether some form of treatment rather than punishment by imprisonment cannot be devised which shall be more scientific, efficacious and humane. Two factors have contributed to the recent accentuation of this feeling: the operation of the mental deficiency act and the release from naval and military prisons of numbers of men suffering from mental and physical disabilities arising out of the war. The justices of the city of Birmingham early in 1919 took action and approached the prison commissioners in the matter. They asked that a whole-time medical officer be appointed and that portions of the hospital be entirely partitioned off from the rest of the prison and adapted for the reception of persons whose mental condition appeared such as to demand careful investigation. This request was granted. In the course of his report, the medical officer who was appointed said: "The large use now made of 'shell shock' as an excuse for criminal acts may be mentioned. Doubtless this is in some cases quite genuine. But in other cases it is simply used as a catchword, and has taken the place of the 'drink' excuse of my earlier years in the service. The differentiation of the genuine cases and the estimation of the precise value of this excuse is a matter of great difficulty." The medical officers of the Borstal institutions have been making a careful investigation into the mentality of all the inmates. It is hoped that in due course a very complete analysis of each boy's mentality will be arrived at and recorded, which will result in the prompt certification of those coming within the scope of the mental deficiency act, and of useful grading for purposes of special education and occupational teaching of those below the average of their class and age but not certifiable.

Book Notices

L'Iris, Étude physiologique sur la pupille et ses centres moteurs. . Par le Dr. A. Magitot, Ophthalmologiste des Hôpitaux de Paris. Paper. Price, 16 francs. Pp. 264, with 27 illustrations. Paris: Gaston Doin, 1921.

This work is the first of a new series of publications, "Bibliothèque d'ophthalmologie." Since the publication of the "Encyclopédie d'opthalmologie de LaGrange et Valude," new methods of examination have been studied, original operations have been invented, and new therapeutics have been applied. It is true that we have periodicals on ophthalmology to keep the specialists up to the progress that has been made in this particular line, but there is much new and original thought set forth in this small, concise volume; in fact, the "Bibliothèque d'ophthalmologie" has been founded to complete and bring up to date the "Encyclopédie d'ophthalmologie." Aside from the physics of ophthalmology, which has specially drawn the attention of the savant, the physiology of the eye as a whole has assumed prime importance. The first part of the volume is devoted to the physiologic study of the normal pupil and its motor centers. After considering the action of the repletion of the blood vessels and that of the vasomotor system on the iris, the author studies the dilatation of the pupil and arrives at the conclusion that the dilating force is greater than the constricting. The membrane of dilatation of Henle being very weak, we can question whether there does not exist in the iris another force at work in dilatation. We have looked for it in the different elements of the stroma, such as the "faisseaux rayonnés" of Kolliker, the "cellules étoilées pigmentées," and the "cellules amas," but as yet it has not been found. This detailed study of physiology and comparative anatomy of the iris, supported by a great number of experiments on the eye, both living and dead, human or animal, will be interesting, not only to the ophthalmologist, but also to the general practitioner and clinician, who appreciate the helpful value of a thorough examination of the eye and action of the pupil in health and disease. The second part of the book treats of the functions of the pupil, such as pupillary reactions and reflexes. In the first chapter the author treats comprehensively pupillary reactions that go with visual functions, and in the second chapter he compares pupillary reflexes independent of visual functions. These two chapters are interesting from a practical point of view, both to the ophthalmologist and to the neurologist, who will find in them much information of value for the purpose of diagnosis.

Enfermedades del Estomago. By Luis Urrutia. Paper. Pp. 671, with illustrations. Madrid: Calpe, 1920.

In the medical profession of Spanish-speaking countries, Dr. Urrutia has long occupied a prominent position. His name appears as the honorary editor on the front page of virtually every Spanish journal. His book on stomach diseases is one of the best of its kind in Spanish. It is divided into eighteen chapters, each of which deals with a form of gastric disorder, except the last, which is devoted to gastric symptoms in other diseases. Of the 665 pages of the book, 184 are devoted to a discussion of ulcers. After quoting the results of others, Dr. Urrutia reports his own experiences with the measure under discussion. While primarily a surgeon, he recognizes the value of the different therapeutic measures which he discusses extensively. In favorable contrast with the omissions in recent editions of Boas' textbook, frequent references will be found to the latest work of American

authors, especially as regards gastric analysis and surgical procedure. The illustrations are almost all taken from personal cases, but their reproduction in most cases hardly measures up to the text. Dr. Urrutia differs with Hoynihan as to the hunger pain's being characteristic of duodenal ulcer, and states, against Moynihan's assertions, that the appearance of pain is synchronous in gastric and duodenal ulcers. While admitting the greater frequency of acute ulcer in young women, he explains it as due to such causes as hyperacidity, which prevents healing of the initial lesion. So far as ulcer is concerned, he insists on the importance of the history. Gastroscopy, he considers, has not reached by far the degree of excellence of other endoscopic methods. He admits a change in his opinion about the value of the "hyper" triad — hypertonus, hypermotility, hyperperistalsis — in duodenal ulcers, a fact which he found, in his last visit to England, agreed with Hoynihan's views. He is skeptical as to the value of Einhorn's thread test. In the diagnosis of cancer, he considers that the enormous frequency of cancerous degeneration of ulcers found by Americans is due to their deeming benign growths as carcinomatous. He is very doubtful as to the value of gastro-enterostomy except in bleeding duodenal ulcer, and then only when associated with pyloric exclusion. In bleeding stomach ulcers, he employs gastrectomy as the only reliable method to prevent recurrences. In duodenal ulcers he applies Balfour's thermodestruction with gastro-enterostomy and sphincterectomy.

A NATURALIST ON LAKE VICTORIA, WITH AN ACCOUNT OF SLEEPING SICKNESS AND THE TSE-TSE FLY. By G. D. Hale Carpenter, D.M., B.Ch., Uganda Medical Service. Cloth. Price, $10. Pp. 333, with 89 illustrations. New York: E. P. Dutton, 1920.

In 1910, at the request of the Tropical Disease Committee of the Royal Society of London, Dr. Carpenter went to Africa to investigate the bionomics of the tsetse fly—*Glossina palpalis.* His work was done on the islands and shores of Lake Victoria Nyanza, where trypanosomiasis, or sleeping sickness, was then causing great havoc among the natives. With the exception of some months' leave of absence, the work was carried on until August, 1914, when the author was called away for war duties. After the armistice he returned and completed the work.

The first three chapters will appeal to physicians. Chapter one is devoted to a description of sleeping sickness, its history, symptoms and its ravages. Of special interest in this chapter is a question from a book entitled "Physical Observations on the Coast of Guiney," published in 1742 by a naval surgeon, John Atkins:

> Sleepy Distemper gives no other previous notice than a want of appetite two or three days before: their sleeps are sound, and sense of feeling very little; for pulling, drubbing or whipping will scarce stir up sense and power enough to move; and the moment you cease beating the smart is forgot and down they fall again into a state of insensibility.

Here, of course, the later stages of the disease are referred to; the early stages—before the lethargic symptoms set in—seemingly were not recognized. Surgeon Atkins ascribes the cause of the disease "to catching cold," "to diet and way of living," "to weakness of the brain; some or all of these causes cooperating to it." As to the treatment: "The cure is attempted by whatever rouses the spirits; bleeding in the jugular, quick purges, sternutories, vesicatories, acupuncture, seton, fontanels, and sudden plunges into the seat." Pretty radical treatment even for savages! In the second chapter, on the natural history of the disease, the author discusses the various forms of protozoa, especially the trypanosome and the tsetse fly. In the third chapter he considers the natural history of *Glossina palpalis,* its habits, etc., and the methods adopted in its study.

As we have said, these three chapters are the part of the book of interest to physicians; they cover the essential facts concerning sleeping sickness, its cause and prevention, as learned by forty months of investigation and observation on the islands of Lake Victoria. The other chapters will appeal to all who are interested in any degree in natural history, and especially in the natural history of tropical Africa. They deal with the climate and the scenery, with mammals, birds, reptiles and monkeys. A most interesting chapter is that on the coloration of insects, and many illustrations are given of protective warning and mimetic colors.

PHYSIOLOGY AND PATHOLOGY OF THE CEREBROSPINAL FLUID. By William Boyd, Professor of Pathology, University of Manitoba. Cloth. Price, $5. Pp. 176, with illustrations. New York: Macmillan Company, 1920.

It speaks well for the interest American physicians are taking in the cerebrospinal fluid that two books on the subject have appeared in this country within the last two years, the first by Levinson and now this book by Boyd. In the first section, Dr. Boyd discusses the anatomy of the subarachnoid space, the origin, circulation, pressure and function of the fluid, the physical and chemical properties and the cytology of the fluid, and the Wassermann and Lange reactions. In the second section he discusses the cerebrospinal fluid findings in various diseases, and also includes a short chapter on therapeutics or, as it should be termed, intraspinal therapeutics. The volume, though presenting much material of recent date, suffers from many important omissions. For instance, in discussing the origin of cerebrospinal fluid the author quotes Dandy as having proved that the fluid is secreted by the choroid plexus. He makes no mention, however, of the investigations of Becht, Mestrezat, McClendon and others, who assert that they can find no positive proof that cerebrospinal fluid has a secretory origin. In discussing the chemistry of normal cerebrospinal fluid, Boyd includes protein, permanganate index, sugar and urea, but ignores other constituents of equal importance, such as chlorids, nitrates and carbon dioxid, which have been found to be present in cerebrospinal fluid in considerable amounts. The chapter on cytology is well written. The illustration on normal cells incorporated in the chapter is, however, of little value. It shows two isolated cells in a vacant circle, and throws no further light on the text.

Medicolegal

Knowledge Not Intended to Be Confidential

(In re Swartz's Will (Okla.), 192 Pac. R. 203)

The Supreme Court of Oklahoma says that the application of the statute of that state to the testimony of a physician in a will contest seems never to have been considered by this court, nor does the court deem it necessary to pass on the question in this case, further than to say that the court appreciates the objects the lawmakers must have had in view in enacting the statute. A patient should be encouraged to give the attending physician full and complete information as to his physical infirmities in order that the physician may have a better knowledge of the physical condition of his patient, and thereby be placed in a better position to give a more intelligent treatment. A patient is encouraged to speak freely to his physician, realizing that everything is said in strict confidence, and, the statute safeguarding him against the possibility of his feelings being shocked or his reputation ruined, he may be absolutely frank with his physician. But the court does not understand that the privilege obtains when all the circumstances show that the communications made or information obtained were made or obtained in the presence of third persons.

In this case, the physician, under whose care had been the patient, suffering from an attack of jaundice, was called in early in the morning of the day when she made her will, which was the day before her death. He found that the disease had reached an acute stage, and informed her of her serious condition, impressing on her the fact that there was no hope for her recovery. The court does not consider that it was error to permit him to testify, in contested proceedings for the probate of the will, when all that he testified to was as to the patient's condition that she was suffering with jaundice. The court says that the matters testified to by him were not obtained by reason of his knowledge as a physician, but rather by a knowledge equally possessed by the laity. The other parties in the room knew just as well as the physician that the testatrix was suffering with that disease. The average man or woman can as easily tell when one is suffering with jaundice as he or she can when the party is suffering

from an ordinary cold. It is true, however, that the lay mind would probably not know the far-reaching effects of jaundice, nor would it know the far-reaching effects of the ordinary cold.

Conceding, but not deciding, that if the physician and the patient had been alone, and it appeared that what was said by the patient was intended to be confidential, or if the physician found it necessary to examine the person of the patient, then there would be some reason for claiming that the veil of secrecy should be thrown over these communications and discoveries. But when the circumstances surrounding the visit were such as to show that what was said on the occasion was not intended to be in confidence, and especially when third persons were present and heard all that was said between the patient and the physician, the statutory provision is inapplicable.

In other words, the court holds, as it states in its syllabus, that the provision of the Oklahoma statute that a physician or surgeon shall be incompetent to testify concerning any communication made to him by his patient with reference to any physical or supposed physical disease, or any knowledge obtained by a personal examination of such patient, does not apply when the circumstances surrounding the communication, or knowledge obtained by personal examination, were such as to show that what was said or discovered on the occasion was not intended to be confidential, and especially when third persons were present and heard all that was said between the patient and the physician, and the knowledge obtained by a personal examination was as patent to the third persons as it was to the physician.

Liability of Physician for Negligence of Assistant—As to Substitutes

(Mullins v. Du Vall (Ga.), 104 S. E. R. 513)

The Court of Appeals of Georgia, Division No. 2, holds that it was error to dismiss, on a general demurrer, the plaintiff's petition in which the defendant was charged with malpractice in treating the plaintiff for pellagra, and a recovery of damages was asked for the breaking off in her arm of a hypodermic needle used on her by a colored assistant to the defendant. The court says that it appeared from the petition with reasonable clearness that when the patient called at the office of the physician to receive the usual hypodermic injection it was at the proper time and in accordance with the regular adopted routine of treatment, as prescribed and employed by the defendant physician; that the relation of physician and patient had not terminated, since the adopted course of treatment, the nature of which was unknown to the plaintiff, was still in process of regular administration, and no provision had been made for its discontinuance, but, on the contrary, general directions had been given to the plaintiff, whereby the treatment was to be given by his attendant or servant in charge whenever the defendant might be absent from his office. The plaintiff's petition excluded the idea that the plaintiff exceeded the authority, since the dealings had with the agent pertained only to the one particular act specifically authorized. It is a general proposition of law that where one holds another out as his special agent, the principal is bound by the agent's apparent authority to do the particular thing thus authorized, and to employ all usual and necessary means that may be reasonably required, in the due, proper and ordinary performance of the particular purpose of the appointment. A physician is liable for the negligent acts of one while acting as his agent or assistant.

It is not this court's opinion, however, that a physician or surgeon can engage in the practice of his profession by proxy. This is not the purport of the holding. Where one physician or surgeon sends another as his substitute, to treat, or perform an operation on, a patient, and the services of the substitute are accepted, the patient will be presumed to have reposed confidence in the professional capacity of the substitute, not as an agent, but as the principal, and will be taken to have relied on him as a physician to exercise his own knowledge, skill and discretion. Thus, when a physician, on leaving town or in other case of need, recommends or even employs another physician or surgeon to treat a patient for him, he would not, in the absence of what would amount to negligence in the selection, be liable for the negligence or lack of skill of the substitute practitioner. In the instant case, however, the physician did not delegate his functions and duties as a physician.

In authorizing or directing the patient to allow his own employee to perform for him and in his stead this particular service in his absence, the defendant did not renounce any part of his functions as the sole physician in the case. Nothing whatever was left to the discretion of the attendant, since what the treatment was to be and when it was to be administered were determined by the line of treatment adopted by the physician himself, and the authority given to the attendant related solely to the one definite and specific act, authorizing the mere physical administration of the prescribed treatment. So far as the question of the amount of skill required by the act was concerned, the direction given amounted to his assurance as an expert that the act was not of such character as to require in his absence the services of another physician, but that in such contingency she might safely receive the treatment as rendered for him and on his behalf by his office attendant or servant. It was on such implied assurance, rather than on any confidence in the professional skill and discretion of the defendant's servant, that the patient had a right to rely.

Amputation by Forbes Operation Deemed at Ankle

(Jones v. Continental Casualty Co. (Iowa), 179 N. W. R. 203)

The Supreme Court of Iowa says the plaintiff had an accident policy in the defendant company, which promised to pay him an indemnity for the loss of either foot, by loss meaning complete severance at or above the ankle. His foot was accidentally crushed under a car wheel. Amputation was necessary, and was made by what was termed the Forbes operation, the line of separation being between the cuneiform and scaphoid, and through the cuboid. The court reaches the conclusion that, under the evidence, the plaintiff lost his foot, and the use of it, by severance at the ankle; at least it was a question for the jury. The court holds that the words used as indicating the point of severance were, at the most, ambiguous; and that to carry out the purposes intended—that is, to pay indemnity for the loss of the plaintiff's foot—it could be properly found that the severance was at the ankle. It followed that the trial court erred in directing a verdict for the defendant, and its judgment on such verdict is reversed and the cause remanded.

Society Proceedings

COMING MEETINGS

Alabama, Medical Association of the State of, Montgomery, April 19-21.
American Assn. of Genito-Urinary Surgeons, Richmond, Va., May 2-3.
American Association of Physicians, Atlantic City, May 10-11.
American Society for Clinical Investigation, Atlantic City, May 9.
Arizona Medical Association, Tucson, April 15-16.
Arkansas Medical Society, Hot Springs, May 3-5.
California, Medical Society of the State of, San Diego, May 10-12.
Connecticut State Medical Society, Hartford, May 18-19.
Florida Medical Association, Pensacola, May 10-11.
Georgia, Medical Association of, Rome, May 4.
Illinois State Medical Society, Springfield, May 17-19.
Iowa State Medical Society, Des Moines, May 11-13.
Kansas Medical Society, Wichita, April 26-28.
Louisiana State Medical Society, New Orleans, April 19-21.
Maryland, Medical and Chirurgical Faculty of, Baltimore, April 26-28.
Michigan State Medical Society, Bay City, May 24-26.
Mississippi State Medical Association, Laurel, May 10-11.
Missouri State Medical Association, St. Joseph, May 17-19.
Nebraska State Medical Association, Lincoln, May 9-12.
New Hampshire Medical Society, Concord, May 25-26.
New Mexico Medical Society, Albuquerque, April 28-30.
New York, Medical Society of the State of, Brooklyn, May 3.
North Carolina, Medical Society of the State of, Pinehurst, April 26-28.
North Dakota State Medical Association, Fargo, May 26-27.
Ohio State Medical Association, Columbus, May 3-5.
Oklahoma State Medical Association, McAlester, May 17-19.
South Carolina Medical Association, Columbia, April 19-20.
South Dakota State Medical Association, Aberdeen, May 24-26.
Tennessee State Medical Association, Nashville, April 12-14.
Texas, State Medical Association of, Dallas, May 10-12.
Western Electro-Therapeutic Association, Kansas City, Mo., April 21-23.
West Virginia State Medical Association, Pence Springs, May 24-26.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Diseases of Children, Chicago

March, 1921, **21**, No. 3

*Nature of Reducing Substance in Urine of Infants with Nutritional Disorders. O. M. Schloss, New York.—p. 211.
*A Peculiar Fever of Infancy, Probably Due to Depletion of the Water Reserve of the Body. C. G. Grulee and B. E. Bonar, Chicago.—p. 220.
*Feeblemindedness in Hereditary Neurosyphilis. O. J. Raeder, Boston.—p. 240.
Electrocardiogram in Normal Children. M. Seham, Minneapolis.—p. 247.
Physical Defects in Children. Report of Six Hundred and Two Cases. W. R. P. Emerson, Boston.—p. 282.
Infants of Low Birth Weight; Its Growth and Development. H. Schwarz and J. L. Kohn, New York.—p. 296.
Effect of a Ration Low in Fat Soluble "A" on Tissues of Rats. M. Davis and J. Outhouse, Madison, Wis.—p. 307.
Cangrene of Toes in an Infant, Due to Scald. G. D. Cutler, Boston.—p. 312.

Reducing Substance in Urine.—Eighty-two patients were observed by Schloss from whom 196 specimens of urine were examined. All of the patients were affected with severe nutritional disturbances characterized by diarrhea, refusal of food, vomiting or loss of weight. The greater number of patients showed the presence of toxic symptoms. The urine of sixty-three infants reduced Benedict's qualitative reagent, Bertrand's method or the micromethod of Benedict and Osterberg. The amount of reducing substance calculated as glucose varied from 0.12 to 2.1 per cent. The glycosuria in these cases is of relatively short duration, so that repeated examinations of the reducing substances in the urine of the same patient is often impossible. As a rule, glycosuria occurs only during the period of acute illness, and the patient either succumbs or improves within a few days. With improvement, the glycosuria diminishes markedly and subsides. The duration of glycosuria varies greatly, but in most cases covers a period of from one to four days. The short duration of the sugar elimination in this variety of case is in marked contrast to the continuous glycosuria associated with the regular ingestion of large amounts of sugar. The fact that the main portion of the reducing substance is fermentable indicates that it is glucose or galactose.

Fever in Infants Due to Depletion of Water Reserve.—There occurs in infants who have been depleted by vomiting or rumination following the use of a thickened paste feeding, a temperature curve which can most easily be explained on the basis of dehydration, though it is not possible absolutely to rule out absorption of bacteria as a cause, either total or partial, of this temperature. This temperature is unaccompanied by toxic or gastro-intestinal symptoms and there is evidence of a reduction in the water content of the blood during the febrile period.

Feeblemindedness in Hereditary Neurosyphilis.—Blood and spinal fluid examinations were made by Raeder on twenty-two children, born of syphilitic parentage. It was found that various degrees of syphilitic infection are present in a definite order in a family of several children, the oldest, born soonest after the parental infection, showing the greatest injury and the succeeding children showing milder degrees in order. Psychometric examinations done on these children show corresponding psychic terracing going pari passu with the grades of physical defect. The youngest children of a family though seronegative, have been found to be feebleminded to a slight degree. The syphilitic injury to the nervous system either projects beyond the physical defect or by reason of the peculiar reactions of the brain compared with other organs we have a finer indicator in it than in ordinary tissues. Or, again, while the central nervous system may recover more rapidly in succeeding births as registered by the Wassermann, colloidal gold and other tests, the recovery may not be as complete. Raeder concludes that mental deficiency in congenitally syphilitic children of not feebleminded parents is in the majority of cases due to syphilis. The virulence of the congenital syphilis toxin in a given fraternity as evidenced by psychometric analysis and biochemical test varies inversely with the order of birth.

American Journal of Insanity, Baltimore

Janury, 1921, **128**, No. 3

State Psychopathic Hospital. A. M. Barrett, Ann Arbor, Mich.—p. 309.
Field of State Society for Mental Hygiene. E. S. Abbott.—p. 321.
What an Adequate Mental Hygiene Program Involves for State Hospital System. G. M. Kline, Boston.—p. 329.
Group Mental Hygiene. W. B. Cornell, Albany, N. Y.—p. 335.
Ten Years' Work of the Illinois Society for Mental Hygiene. R. P. Truitt, Chicago.—p. 343.
Extension Course in Psychiatric Social Work. H. I. Gosline, Howard, R. I.—p. 355.
Medical and Social Aspects of Childhood Delinquency. S. Brown, II, Chicago.—p. 365.
A Review of the Five-Year Period Following Admission in One Hundred and Eleven Mental Patients. E. D. Bond, Philadelphia.—p. 385.
Present Status of Pathology of Mental Disorders. A. C. Buckley, Philadelphia.—p. 395.
Recurrent Dream, Precursor of Senile Dementia. C. W. Burr, Philadelphia.—p. 409.
A Theory of Personality Based Mainly on Psychiatric Experience. A. J. Rosanoff.—p. 417.
A Study of the Diagnoses in Cases Seen at the Psychopathic Department and Hospital Department of the Boston State Hospital. L. G. Lowrey.—p. 438.
Medical and Administrative Management of Ohio's Institutions. E. A. North, Cincinnati.—p. 451.
The Absorption of Phenolsulphonephthalein from the Subarachnoid Space in Dementia Praecox and Paresis. P. G. Weston, Warren, Pa.—p. 465.

American Journal of Roentgenology, New York

February, 1921, **8**, No. 2

*Roentgenographic Studies of Bronchietasis and Lung Abscess After Direct Injection of Bismuth Mixture Through Bronchoscope. H. L. Lynah and W. H. Stewart, New York.—p. 49.
Bucky Diaphragm Principle Applied to Radiography of Spine. H. E. Potter, Chicago.—p. 61.
Pneumoperitoneum as Aid in Differential Diagnosis of Diseases of Left Half of Abdomen. A. F. Tyler, Omaha, Neb.—p. 65.
Use of Carbon Dioxid in Pneumoperitoneum. W. C. Alvarez, San Francisco.—p. 71.
Traumatic Pneumocranium. A. S. Doyle, Philadelphia.—p. 73.
Retinometer. A. H. Pirie, Montreal, Can.—p. 75.
Intracranial Calcification. J. T. Murphy, Toledo.—p. 77.
New Roentgenographic Technic for Study of Thyroid. G. E. Pfahler, Philadelphia.—p. 81.

Roentgenographic Study of Bronchiectasis and Lung Abscess.—Five cases are reported by Lynah and Stewart to show that bismuth mixtures can be injected into the bronchi and lungs of a living patient without danger, and that this procedure will open an enormous field of usefulness in the study of cough, the expulsion of substances from the lungs, and lung drainage. It will also aid in localizing bronchial strictures in the same manner as in the esophagus. Furthermore, it will be of the greatest aid to the thoracic surgeon by mapping out the abscess cavity in the respective lobe of the lung. The bismuth mixture injected in these patients was 8 c.c. of bismuth subcarbonate in pure olive oil (1:2). The mixture is rendered sterile by boiling before injection. The injection should be made slowly and not with a "squirt," or else the roentgenographic observations may be spoiled by bismuth soaking the lung structure surrounding the diseased area. While bismuth mixtures were originally injected for the purpose of lung mapping in cases of lung abscess cavities, they seem to have been of therapeutic benefit to the five patients on whom they were tried. So far the procedure has done no harm. Experience has shown that the roentgen examination should be made almost immediately after the removal of the bronchoscope, otherwise the patient, in a fit of coughing, will remove much of the bismuth from the involved lung.

Annals of Medical History, New York

1921, **3**, No. 1

Collection of Boston Phrenological Society; A Retrospect. J. C. Warren, Boston.—p. 1.
An Ancient Egyptian Medical Prescription for Hysteria. I. H. Coriat, Boston.—p. 12.
Elizabeth Frey, Pastor Fliedner and Florence Nightingale. H. B. Jacobs, Baltimore.—p. 17.
Leonardo Da Vinci as a Scientist. J. C. Hemmeter, Baltimore.—p. 26.
Sir William Osler. D. A. Webb, New York.—p. 45.
Shakespear and Practice of Medicine. L. M. Griffiths, Bristol, England.—p. 50.
An Assyro-Babylonian Treatise on Diseases of Male Urinary and Genital Organs. E. Podolsky, Brooklyn.—p. 62.

On Giving of Medical Degrees During Middle Ages by Other than Academic Authority. H. Friedenwald, Baltimore.—p. 64.
Scientific Life of Thomas Bartholin. J. H. Skavlem, Cincinnati.—p. 67.

Boston Medical and Surgical Journal

March 3, 1921, **184**, No. 9

Energy Requirements of Girls from 12 to 17 Years of Age. F. G. Benedict and M. F. Hendry, Boston.—p. 217.
Clinical Observation with Benedict's New Portable Respiration Apparatus. P. Roth, Battle Creek, Mich.—p. 222.
Sidepaths in Medicine. J. Perkins, Providence, R. I.—p. 230.
Cases in Which Basal Metabolism Measurement is Useful. O. H. Stansfield, Worcester, Mass.—p. 235.

March 10, 1921, **184**, No. 10

Rôle of Immunity in Tuberculosis. H. F. R. Watts, Boston.—p. 241.
*Schick Test and Immunization with Diphtheria Toxin-Antitoxin. B. White, Boston.—p. 246.
Internal Drainage of Acute Ears, and Abortion of Acute Mastoiditis by Use of Wright's Solution. G. A. Leland, Boston.—p. 251.
Treatment of Hypertrophied Tonsils and Adenoids by Radium. F. H. Williams, Boston.—p. 256.
Energy Requirements of Girls from 12 to 17 Years of Age. F. G. Benedict and M. F. Hendry, Boston.—p. 257.

Schick Test.—White urges that all persons over 18 months of age should have their susceptibility to diphtheria determined by means of the Schick test, and the reaction which they show should be noted either in institutional records or in the records of the family physician. In infants below 18 months of age, the Schick test is not necessary because a negative reaction may give rise to a false sense of security. Very young infants may exhibit a negative Schick test owing to the immunity passively acquired from the mother, but, inasmuch as this type of immunity is transient, it is safer to assume that no child under 18 months possesses permanent immunity. All infants below 18 months of age, accordingly, should be actively immunized with three doses of 1.0 c.c. of diphtheria toxin-antitoxin mixture, irrespective of the reaction to the Schick test which the infants might show at the time of immunization. The doses should be 0.5 c.c. for babies under 6 months of age and 1 c.c. for all others. All persons over 18 months of age who give a positive Schick test should be immunized by receiving three subcutaneous injections of 1 c.c. each of toxin-antitoxin at intervals of seven days. All persons immunized by this method should be retested three months after the last injection, and reimmunized if they should by any chance still give a positive Schick reaction.

Canadian Medical Association Journal, Montreal

January, 1921, **9**, No. 1

Interpretation of Some Gastro-Intestinal Symptoms. W. Goldie, Toronto.—p. 5.
Diagnosis of Gastric Ulcer. R. H. M. Hardisty, Montreal.—p. 10.
Duodenal Ulcer. N. J. MacLean, Winnipeg.—p. 12.
Diagnosis of Gastric Ulcer. G. E. Richards, Toronto.—p. 18.
Differential Diagnosis of Appendicitis. A. Primrose, Toronto.—p. 23.
Some Unusual Abdominal Emergencies. H. A. Bruce, Toronto.—p. 27.
Drainage in Surgery. J. Halfpenny, Winnipeg.—p. 30.
Practical Value of Metabolism Clinic. C. F. Martin and E. H. Mason, Montreal.—p. 32.
Present-Day Conception of Hay-Fever. H. K. Detweiler, Toronto.—p. 37.
Two Cases of Pellagra in Canada. M. Mackay, Sherbrooke, Que.—p. 41.
Focal Infection with Special Reference to Medical Inspection of Schools. F. H. Wetmore, Hampton, N. B.—p. 43.
Suture of Circumflex Nerve. F. J. Tees, Montreal.—p. 46.
Relation of Physical Exhaustion to Chronic Ill-Health. D. H. Bernstein, Montreal.—p. 48.

Florida Medical Association Journal, St. Augustine and Jacksonville

February, 1921, **7**, No. 8

Eligibility of Applicants for Railroad Service from a Medical and Surgical Standpoint. M. W. Seagears, St. Augustine.—p. 118.
Demand for a Broader Field of Greater Number of Nurses. R. R. Kime, Orlando.—p. 121.
Laboratory Reports. B. L. Arms, Jacksonville.—p. 123.

Illinois Medical Journal, Oak Park

February, 1921, **39**, No. 2

Efficient Public Health Administration Best Safeguard Against Radical Medical-Social Legislation. C. St. Clair Drake, Springfield.—p. 109.
Politically Ill Profession. C. E. Price, Robinson.—p. 114.
Chronic Focal Infection, as Affecting Nervous System. W. G. Stearns, Evanston.—p. 117.
Focal Infections and Their Clinical Relations to Metastases in Female Genitalia. A. B. Keyes, Chicago.—p. 119.
Chronic Focal Infections as Affecting Skin. E. L. McEwen, Chicago.—p. 122.
Foci in Chest Cavity. S. V. Balderston, Evanston.—p. 124.
Abdominal Foci as Causes of General Diseases (Medical Aspect). W. G. Alexander, Evanston.—p. 126.
Focal Infections Originating in Genito-Urinary Tract. R. H. Herbst and A. Thompson, Chicago.—p. 128.
Goiter Operation Technic. E. P. Sloan, Bloomington.—p. 130.
Special Field of Neurological Surgery After Another Interval. H. Cushing, Boston.—p. 133.

Journal of Pharmacology and Experimental Therapeutics, Baltimore

March, 1921, **17**, No. 2

*Magnesium Sulphate in Arsenic Poisoning. O. A. Hansen, Minneapolis.—p. 105.
*Behavior of a Fixed Oil (Peanut Oil) Injected Intraperitoneally. E. W. Schwartze, Washington, D. C.—p. 115.
Influence of Colloids on Action of Noncolloidal Drugs. II. W. S. Van Leeuwen and J. Zeijdner, Leiden, Holland.—p. 121.
Comparison of Action of Certain Drugs on Muscular Work in Frogs. E. M. Scarborough, London.—p. 129.
Action of Histamin and Peptone on Isolated Small Intestine. H. Olivecrona, Baltimore.—p. 141.

Value of Magnesium Sulphate in Arsenic Poisoning.—Hansen endeavored to establish the positive action of magnesium sulphate against the toxicity of arsenic. It prolonged the average life of a series of fifty rabbits poisoned by arsenic from 219 hours to 415 hours on the average, but cannot be said to have saved life in rabbits. Magnesium sulphate is toxic in large doses and to some extent in medium sized doses.

Result of Intraperitoneal Injection of Peanut Oil.—In the experiments made by Schwartze from 1 to 10 c.c. of cold pressed peanut oil was injected into the peritoneal cavity of rats, mice, guinea-pigs, rabbits and cats. As far as was observed no untoward physiologic effect was produced in any of the animals by the oil. Two and three months after the injection, a considerable amount of the oil which has been injected usually was found free within the peritoneal cavity. Cystlike spheres containing oil were also present. Minor histologic study of these cystlike bodies was made and the presence of a connective tissue capsule, capillaries and granular contents ascertained. The nature of their lining, however, was not determined. The usefulness as a pharmacologic method of the intraperitoneal injection of fixed oil as a solvent for fat soluble substances would seem to be limited, if the entrance of the dissolved material into the circulation is dependent on the relatively rapid absorption of the solvent oil. This, however, does not imply that its use for administering volatile, serum soluble and even suspended material might not be advantageous.

Laryngoscope, St. Louis

February, 1921, **31**, No. 2

War Surgery: Plastic Operations of Face by Means of Fat Grafts. J. N. Roy, Montreal, Canada.—p. 65.
Tests of Auditory and Static Labyrinths and Related Intracranial Pathways. Report of Cases. J. McCoy and M. J. Gottlieb, New York.—p. 78.
Brain Abscess Following Streptococcus Sore Throat. L. R. Effler, Toledo, Ohio.—p. 95.
Borderline Diseases. S. Yankauer, New York.—p. 101.
Internal Drainage of Acute Ears, and Abortion of Acute Mastoiditis by Use of Wright's Solution. G. A. Leland, Boston.—p. 106.
Simple Noise Apparatus for Testing Ears Separately. I. F. Shapiro, New York.—p. 114.
New Instruments for Use in Laryngeal Surgery. H. L. Lynah, New York.—p. 116.

Maine Medical Association Journal, Portland

February, 1921, **11**, No. 7

Modern Examination of Stomach. F. W. White, Boston.—p. 217.

Medical Record, New York

March 12, 1921, **99**, No. 11

Responsibility of General Practitioner in Regard to Cancer. L. D. Bulkley, New York.—p. 421.
Early and Important Symptoms of Mental Diseases. M. H. Bochroch, Philadelphia.—p. 425.
The Criminal. P. M. Lichtenstein, New York.—p. 428.
Congenital Hypertrophic Pyloric Stenosis in Infants. P. I. Nixon, San Antonio, Texas.—p. 433.
*Relation of Ectopic Pregnancy to Chronic Endocervicitis. M. O. Magid, New York.—p. 435.

Relation of Persistent Thymus Gland to Criminology. S. J. Morris, Morgantown, W. Va.—p. 438.
Congenital Elevation of Scapula: Report of Case. J. Grossman, New York.—p. 439.

Relation of Ectopic Pregnancy to Endocervicitis.—Magdid states that chronic endocervicitis is the fundamental causative factor in the majority of ectopic pregnancies. He cites four cases.

Michigan State Medical Society Journal, Grand Rapids

March, 1921, **20**, No. 3

*Case of Drug Addict. I. H. Neff, Detroit.—p. 79.
Ultraviolet Ray Therapy with Case Histories. L. C. Donnelly, Detroit.—p. 83.
Case of Aleukemic Leukemia Clinically Resembling Von Jaksch's Anemia. R. M. Greenthal, Ann Arbor.—p. 86.
Modern Case of Obstetric Patient. H. H. Cummings, Ann Arbor.—p. 88.
Pernicious Anemia of Pregnancy. H. B. Schmidt, Detroit.—p. 92.
Status of Cripples in Detroit. C. L. Storey, Detroit.—p. 94.
Sequels of Lethargic Encephalitis in Four Cases. R. C. Moehlig, Detroit.—p. 98.

The Drug Addict.—Neff suggests that while the present federal narcotic law is in force, it is recommended that the dispensing of all narcotics as described by the Harrison law, be controlled and authorized by a central bureau, preferably the state board of health, and that such administrative agency cooperate in every particular with the medical profession and the federal government. The problem is a public health question of great importance and pending the enactment of an international law regulating the production and disposition of opium and its derivities, the question of individual application of any narcotic law should be relegated to the physician who must necessarily conform to any existing law regulating the dispensing of narcotics. The medical profession, when assuming such responsibilities must recognize the importance of the task and try to secure legislation which will not handicap the physician in performing his duty to his patient and to the public in general.

Military Surgeon, Washington, D. C.

February, 1921, **48**, No. 2

Government Rehabilitation of ex-Service Personnel of World War. J. G. Townsend.—p. 127.
General Health Conditions and Medical Relief Work in Armenia. W. P. Davenport.—p. 139.
Some Misleading Beliefs Regarding Pulmonary Tuberculosis. E. O. Otis, Boston.—p. 159.
Keeping Fit in Tropics. E. Colby.—p. 168.
Public Health Consideration Relating to Influenza, Pneumonia and Allied Epidemics; Epidemiologic Point of View. F. G. Crookshank.—p. 172.
Blood Changes in Aviator. W. L. Culpepper.—p. 180.
Effort Syndrome; Significance of Certain Murmurs. A. E. Cohn.—p. 186.
Instruction and Training of Officers of Medical Department. A. D. Tuttle.—p. 199.
Food Conservation and Medical Officer. W. H. Eddy.—p. 206.
Success of Campaign for Combating Venereal Disease in A. E. F. H. H. Young.—p. 213.
Water Soluble B Vitamin Content of Certain Vegetables. G. C. Dunham.—p. 223.

Missouri State Medical Association Journal, St. Louis

March, 1921, **18**, No. 3

Health and Disease. G. Dock, St. Louis.—p. 77.
Diagnosis of Acute Septic Osteomyelitis. J. G. Sheldon, Kansas City, Mo.—p. 84.
*Varicella in Adult. J. A. Rossen and M. C. Woodruff, St. Louis.—p. 86.
Common Obstetric Mistakes. W. C. Gayler, St. Louis.—p. 87.
Gonorrhea in Female. R. E. Wobus, St. Louis.—p. 88.
Reducing Dangers in Tonsil Operations to Minimum. W. D. Black, St. Louis.—p. 90.

Varicella in Adult.—In the distribution of lesions a marked difference is observed in the adult. While it is unusual to find many lesions on the face of the active child, quite the reverse is true in the adult; often the face, as in variola, carried quite as many lesions as other portions of the body. Even the palmar and plantar surfaces may have their quota. A markedly different appearance will be observed between the lesions occurring on the face and extremities and those found on the trunk. The cases observed by the St. Louis Health Department have shown this atypical varicellous lesions. In fact, so marked has this condition been that strict orders are issued forbidding the final diagnosis unless the patient is stripped. The varicellous patient will show entirely different types of lesions on the trunk, thus easily establishing the diagnosis between varicella and variola. It must always be borne in mind, however, that the lesions of varicella are at all times multiform, while those of variola are uniform.

Nebraska State Medical Journal, Norfolk

February, 1921, **6**, No. 2

Early Symptoms and Treatment of Neural Syphilis. J. L. Greene, Hot Springs, Ark.—p. 33.
Diverticula of Duodenum. Report of Cases. A. F. Tyler, Omaha.—p. 41.
Treatment of Chronic Arthritis with Special Reference to End Results. W. L. Bierring, Des Moines, Iowa.—p. 46.
Diagnosis and Treatment of Weak and Flat Feet. W. E. Wolcott, Omaha.—p. 49.

March, 1921, **6**, No. 3

*Intra-Abdominal Injuries Due to External Violence. A. F. Jonas, Omaha.—p. 65.
Clinical Classification of Hyperthyroidism-Exophthalmic Goiter. C. C. Johnson, Lincoln.—p. 70.
Epidemiology of Communicable Diseases. H. Farrell, Kearney.—p. 72.
Clinical Diagnosis of Tumors of Breast. M. Emmert, Omaha.—p. 75.
Treatment of Injuries of Spine, H. W. Orr, Lincoln.—p. 77.
Syphilis as Seen at Night Venereal Clinic, University of Nebraska Dispensary. C. R. Kennedy, Omaha.—p. 80.
Reorganized State Medical Society. C. A. Roeder, Omaha.—p. 83.
Anatomic and Dynamic Principles Involved in Prolapsus Uteri. O. D. Johnson, Kearney.—p. 86.

Intra-Abdominal Injuries.—With an increasing experience with acute intra-abdominal lesions resulting from injury, Jonas says he is no nearer to determining the exact nature of the lesion prior to opening the abdominal cavity than he was twenty years ago. It is true, he has learned more fully to appreciate the danger signals and is fully aware of their gravity, but he is not able to differentiate between contusions and lacerations of the hollow and solid viscera nor can he estimate the extent of the damages. But he has learned that when in doubt an open exploration is the safer plan.

Neurological Bulletin, New York

February, 1921, **3**, No. 2

Speech, Its Development and Integration with Intelligence. M. Osnato, New York.—p. 47.
Cortical Word Blindness. H. S. Howe, New York.—p. 64.
General Paralysis: Presentation of Necropsy Material and Discussion of Nature of Disease. I. J. Sands, New York.—p. 72.
Bulbar Amyotrophic Lateral Sclerosis. I. S. Wechsler, New York.—p. 82.

New Jersey Medical Society Journal, Orange

February, 1921, **18**, No. 2

Study of Acute Infections of Ear as Observed by General Physician. J. C. Keeler, Philadelphia.—p. 37.
Cerebrospinal Fluid, Its Changes in Various Diseases and Their Significance. E. G. Hummel, Camden, N. J.—p. 42.
Hospital, Doctor and Dentist. F. F. Carman, Newark.—p. 49.
Etiology and Treatment of Acne Vulgaris. W. O. Roop, Atlantic City.—p. 52.
Some Kidney Complications During Pregnancy and Their Treatment. W. P. Glendon, Bridgeton.—p. 56.
Roentgen Ray and Roentgen-Ray Treatment. R. W. Davison, Trenton.—p. 59.

New York Medical Journal

March 16, 1921, **113**, No. 10

*Telangiectases of Face and Mucous Membranes of Nose and Throat Associated with Severe Epistaxis. W. Freudenthal, New York.—p. 425.
Stenosis of Esophagus. Report of Three Cases. T. E. Carmody, Denver.—p. 427.
Double Mastoid Operation; Acute Thyroadrenal Exhaustion. J. G. Callison, New York.—p. 431.
Malignant Diseases of Nose and Throat with Special Reference to Cancer of Nasal Fossae, Nasopharynx and Tonsil. W. J. M. Wurtz, Buffalo.—p. 434.
Fluoroscopic Bronchoscopy, Esophagoscopy and Gastroscopy. R. C. Lynch, New Orleans.—p. 437.
Six Cases of Foreign Bodies in Esophagus and Bronchi. C. J. Imperatori, New York.—p. 438.
Suppurative Submaxillary Adenitis. B. Lipshutz, Philadelphia.—p. 440.
Source of Focal Infection Iritis. C. G. Crane, Brooklyn.—p. 442.
General Versus Local Anesthesia in Operations on Nose and Throat. W. R. Watson, Philadelphia.—p. 444.
Aid to Diagnosis of Suspected Foreign Body in Esophagus. E. J. Patterson, Pittsburgh.—p. 447.
Gillies New Method in Giving Support to the Depressed Nasal Bridge and Columella. J. E. Sheehan, New York.—p. 448.
Qualifications a Peroral Endoscopist Should Possess. J. W. Murphy, Cincinnati.—p. 451.

An Unusual Cataract Operation. H. Tuttle, Ithaca.—p. 452.
Gunshot Wound of Lateral Sinus. R. H. Fowler, New York.—p. 453.
Resection of Tarsus and Conjunctiva (Combined Excision) with New Instruments. A Review of Three Hundred Cases. A. S. Tenner, New York.—p. 454.
Intranasal Operations with Special Reference to Postoperative Packing. J. W. Miller, New York.—p. 456.
Tumor of Hypopharynx in Child of Eleven Weeks. D. J. G. Wishart, Toronto, Canada.—p. 458.
Practical Points in Diagnosis of Sinus Diseases from Point of View of General Practitioner. R. F. Ridpath, Philadelphia.—p. 460.
Broncholith and Pneumoconiotic Material Removed from a Bronchiectatic Cavity by Peroral Bronchoscopy. C. Jackson and W. H. Spencer, Philadelphia.—p. 461.
Traction Pulsion Diverticulum of Esophagus. H. Arrowsmith, Brooklyn.—p. 463.
Case of Laryngocele. S. Iglauer, Cincinnati.—p. 464.
Diseased Tonsils as Factor in Focal Infection. H. Rodman, New York. —p. 466.
Endocrine Gland Extracts; Their Manufacture and Use. S. G. Strauss, New York.—p. 468.

Heredity of Telangiectases.—The hereditary element in this disease is well shown in Freudenthal's case. The patient's mother and, as far as is known, one brother and one sister, suffered from recurring epistaxis. This was a case of multiple telangiectases all over the body, affecting the skin and mucous membranes of nose and throat, causing epistaxis of a dangerous character, together with syphilis, chronic nephritis and myocarditis. Every means to check epistaxis was tried but failed. The only thing that gives some relief to the patient now is thromboplastin, which he himself applies to the nose on a pledget of cotton. Intravenous injection of sodium citrate, 20 c.c. of 30 per cent. solution failed to check bleeding only for a short time, but the change in the coagulation time of the blood was remarkable, and it was noticed each time an injection was made. Thus, for example, at the very first trial the coagulation time before the injection was sixteen minutes. Three hours later it had gradually come down to only 1.5 minute. The effect was similar in the following attempts.

New York State Journal of Medicine, New York

February, 1921, **21**, No. 2

*Rôle of Colon Bacillus in Infections of Kidney. H. Cabot, Ann Arbor, Mich.—p. 35.
*Diagnosis of Right Iliac Fossa Pains and End-Results in 200 Chronic Appendicitis Operations. H. Barclay and C. A. McWilliams, New York.—p. 38.
Ward Treatment of Gonorrhea in Female. E. D. Barringer, New York. p. 42.
*Incidence of Cancer of Cervix Occurring in Retained Stump After Supracervical Amputation for Fibroids. J. O. Polak, Brooklyn.—p. 45.
Lethargic Encephalitis. H. L. Winter, Cornwall.—p. 48.
Results of Presence of Adenoids in Infancy. R. G. Freeman, New York.—p. 50.
Spontaneous Rupture of Heart; Spontaneous Rupture of Aneurysm of Heart; Primary Adenocarcinoma of Transverse Colon. K. S. Kennard, New York.—p. 52.
Compulsory Health Insurance. A. L. Benedict, Buffalo.—p. 54.

Colon Bacillus Infection of Kidney.—Observations have suggested to Cabot that colon bacilli are excreted by the kidney during pregnancy in a proportion of cases possibly large. In a series altogether too small to warrant conclusions they were found constantly in about 25 per cent. It is at least arguable, he says, that intestinal conditions commonly existing during pregnancy are likely to result in bacillemia and consequent bacilluria, which may still further facilitate the occurrence of infection. Cabot has also noted the frequency with which the so-called spontaneous pyelonephritis of men not associated with urinary obstruction has been associated with disease of the large intestine, often with so-called recurrent colitis, sometimes with mucous colitis. In adult life, and particularly in women, constipation and varying degrees of visceral ptosis are common and may result in throwing colon bacilli into the circulation more commonly than is believed. Cabot is positive in his assertion that the mere introduction of colon bacilli into the bladders of children will not produce infection. All the experimental and clinical evidence is against it. Even though it be quite arguable that infections in adults depend on some abnormal condition of the large intestine these conditions can hardly be assumed to exist in children and if they did it would be difficult to account in this way for the notorious immunity of boys as compared with their little sisters. True colon bacillus pyelonephritis is as rare in boys as it is common in girls.

Removal of Appendix.—Barclay and McWilliams claim that the appendix is taken out too indiscriminately for a multiplicity of diverse conditions, any or all of which may give rise to indigestion and right-sider pain. They plead for a little more thoroughness and conservatism in working out the preliminary diagnosis, and, at the time of operation, for a more careful exploration of the whole abdomen through an adequate right rectus incision, or a transverse one.

Cancer in Cervix Stump.—Polak states that cancer occurring in the retained cervix after the supracervical operation for fibroids occurs in approximately 2 per cent. of all fibroid tumors of the uterus. The great majority of these cases occur at the cancer age, namely, between 40 and 50, and in cervices that have been traumatized by childbirth, operation or have been the seat of chronic cervical inflammation. The great majority occur in the portio or just within the external os and are squamous cell cancer. Hence their point of origin is not removed by coning out the cervix. The interval of occurrence, excluding those cases in which the cancer has probably coexisted at the time of the operation, has varied from five to twenty-one years after the original operation. Therefore, the routine employment of supracervical hysterectomy in those fibroids which need operation should be abandoned. Partial removal of the uterus should only be employed when the cervix is free from injury or disease in the nulliparous women.

Ohio State Medical Journal, Columbus

March 1, 1921, **17**, No. 3

Juvenile Psychosis. H. H. Drysdale, Cleveland.—p. 157.
*External Malleolar Reflex: Chaddock's Sign. R. Ingram, Cincinnati. —p. 161.
Colds and Coughs. G. H. Boehmer, Sandusky.—p. 165.
Differential Diagnosis of Traumatisms and Diseased Conditions of Esophagus. T. Hubbard and E. G. Galbraith, Toledo.—p. 167.
Surgical Fads and Fancies. O. S. Steiner, Lima.—p. 170.
*Use of Iodized Table Salt in Prevention of Goiter. H. G. Sloan, Cleveland.—p. 172.
*Proctitis Sphingos. J. M. Frick, Toledo.—p. 174.
Intra-Ocular Infection with Organism of B. Subtilis Type. P. J. Stueber, Lima.—p. 175.
Placenta Praevia: Report of Five Cases. W. F. Dager, Lorain.—p. 177.

Chaddock's Sign.—Ingram has come to the conclusion that while the malleolar reflex does not in any way displace the Babinski, it would appear to be a more delicate sign and test. The Chaddock is a contralateral sign and is very useful in determining the degree of slight pyramidal trouble and it has the two advantages of appearing earlier and being seen later than the Babinski sign.

Iodized Sodium Chlorid to Prevent Goiter.—In an effort to provide an inexpensive routine and popular prophylactic, Sloan suggests the use of iodized table salt especially in those regions which are considered goitrous. To be efficient the concentration of the iodin does not need to be more than 1 in 5,000. If salt containing this minute quantity of sodium iodid could be used for all individual household purposes throughout the goiter belts, it is Sloan's opinion that the development of endemic goiter in the second generation would be prevented and that other goiterous conditions would not be exaggerated.

Proctitis Sphingos.—This condition is an acute inflammation of the rectal mucosa, extending from the white line of Hilton to the upper margin of the internal sphincter muscle. The pain associated with the disease is peculiar in that it usually occurs before the patient arises in the morning and gradually subsides after a movement of the bowels. The condition yields rapidly to local and general therapy.

Public Health Journal, Toronto

February, 1921, **12**, No. 2

Activated Sludge Process of Sewage Disposal. G. G. Nasmith.—p. 49.
Education Possibilities. Sex Education. L. A. Hamilton.—p. 59.
*Prevalence of Malnutrition in Public School Children of Ontario.—A. Brown and G. A. Davis.—p. 66.

Malnutrition in Schoolchildren.—Of 2,843 children examined by Brown and Davis in 1,256, or 44 per cent., were 7 per cent., or more underweight, and 751, or 26 per cent., were from 10 to 12 per cent., or more underweight. Estimating the total school population as 79,000, 26 per cent., are undernourished and in a serious state of health.

Virginia Medical Monthly, Richmond

February, 1921, **47**, No. 11

Conservative Application of Radium in Benign Conditions of Uterus. R. L. Payne, Norfolk.—p. 525.
Importance of Early Diagnosis and Early Removal of Ovarian Cystoma. W. L. Peple, Richmond.—p. 527.
Cardiospasm: Report of Cases. R. C. Fravel, Richmond.—p. 529.
Examination of Eye in Neurosurgical Patients. J. H. Baird, Richmond.—p. 532.
Diagnosis and Treatment of Diphtheria. W. L. Harris, Norfolk.—p. 536.
Clinical Manifestations of Chronic Appendicitis in Children: Diagnosis by Roentgen Rays. A. L. Gray, Richmond.—p. 538.
Importance of Early Recognition and Treatment of Bone and Joint Infections. W. T. Graham, Richmond.—p. 541.
Treatment of Neurosyphilis. R. F. Gayle, Jr., Richmond.—p. 543.
Pediatric Review While Doing Postgraduate Work in 1920. S. D. Hatfield, Iaeger, West Va.—p. 549.
Early, Intermediate, and Late Treatment of One Thousand Cases of Infantile Paralysis from Orthopedic Surgeon's Viewpoint. A. Myers, Charlotte, N. C.—p. 553.
Experience of Director in Field Hospital in A. E. F. I. Brown, Norfolk.—p. 555.
Peptic Ulcer. T. C. Harris, Kenbridge.—p. 558.
Use of Pneumococcus Antigen. G. A. Ezekiel, Richmond.—p. 561.

West Virginia Medical Journal, Huntington

February, 1921, **15**, No. 8

Rat Bite Fever; Case Report. A. Arkin, Morgantown.—p. 281.
Infant Foods and Infant Feeding. A. A. Shawkey, Charleston.—p. 284.
Influenza—Past and Present. H. E. Gaynor, Parkersburg.—p. 287.
Subcutaneous Use of Lobella Inflata. E. F. Moore, Davis.—p. 291.
Rupture of Rectum During Labor. A. J. Noome, Wheeling.—p. 301.

Wisconsin Medical Journal, Milwaukee

February, 1921, **19**, No. 9

Outline of Twelve Year's Study of Hodgkin's Disease and Allied Affections. J. L. Yates, Milwaukee.—p. 447.
Why Traveling Tuberculosis Clinic? O. Lotz and A. A. Pleyte, Milwaukee.—p. 451.
Results in Open Treatment of Fractures. J. F. Smith and M. L. Jones, Wausau.—p. 454.
Chronic Cystitis. J. C. Sargent, Milwaukee.—p. 456.
Pneumococcus Peritonitis. V. F. Marshall, Appleton.—p. 459.
Chronic Suppurative Otitis Media. G. E. Shambaugh, Chicago.—p. 462.
St. Andrew's Institute for Clinical Research. N. Andrews, Oshkosh.—p. 467.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

Annals of Tropical Medicine and Parasitology, Liverpool

Feb. 8, 1921, **14**, No. 3

Human Intestinal Protozoa in North Queensland. P. A. Maplestone.—p. 283.
Occurrence of Certain Cestodes in New Hosts. T. Southwell.—p. 295.
Two New Cylicostomum Species from Horse. A. Kotlan.—p. 299.
Ceratopogonine Midges of Gold Coast with Descriptions of New Species. H. F. Carter, A. Ingram and J. W. S. Macfie.—p. 309.
Musca Inferior, Stein, Type of New Genus of Philaematomyine Flies (Diptera). M. Bezzi.—p. 333.
Some Statistics of Filariasis. J. W. W. Stephens.—p. 341.
New Species of Cestode (Anoplocephala Vulgaris) from an African Rhinoceros. T. Southwell.—p. 355.
Treatment of Malaria. XXXI. Time of Onset of Paroxysms in Simple Tertian Malaria. J. W. W. Stephens, W. Yorke, B. Blacklock and J. W. S. Macfie.—p. 365.
*Have Differential Leukocyte Counts Any Value? J. W. W. Stephens, W. Yorke, B. Blacklock, J. W. S. Macfie, C. F. Cooper and H. F. Carter.—p. 371.
Development of Larvae of Dirofilariaimmitis in Dog Fleas Ctenocephalus Felis and Canis. A. Breinl.—p. 389.

Value of Differential Leukocyte Counts.—The authors direct attention to the fact that a differential leukocyte count can only be of value if the portion of the film counted is of the same composition as the rest of the film, or of the same composition as corresponding portions of the film; that the blood which issues from the puncture is of the same composition as that in the vessels, i. e., that various drops from various punctures of a single individual made at the same time are of identical composition, and that the "normal values" of the textbooks are correct, otherwise there is no standard with which any leukocyte count can be compared. The authors state that they have not been able to discover how these "normal values" have been ascertained. These points are elaborated and the results of different investigations are presented.

British Medical Journal, London

Feb. 26, 1921, **1**, No. 3139

*Function of Kidneys in Enlargement of Prostate. J. F. Dobson.—p. 289.
Diseases of Infants Due to Prolonged Feeding with Excess of Carbohydrates. C. E. Bloch.—p. 293.
*Sapremic Glycosuria. C. G. Higginson.—p. 296.
Self-Inflicted Injuries in Civilian Practice. A. R. Short and C. H. Walker.—p. 298.
One Thousand Cases of Bilharziasis Treated by Antimony Tartrate. F. O. Lasbrey and R. B. Coleman.—p. 299.
Stenosis at Internal Meatus After Suprapubic Prostatectomy. A. Fullerton.—p. 301.
Herpes and Varicella. E. L. Elliott.—p. 302.
Concurrent Herpes Zoster and Varicella. R. Hill.—p. 302.
Treatment of Local Leishmaniasis. C. Donovan.—p. 302.
Bullet in Cauda Equina. D. H. Vickery.—p. 302.

Kidney Function in Enlarged Prostate.—Dobson urges that blood urea estimation should be carried out in every case of enlarged prostate before operation. Blood urea figures over 25 points to the desirability of a period of preliminary treatment, with drainage of the bladder either by catheter or through a cystotomy wound. If the tied-in catheter is used, further blood area estimations will show whether improvement is taking place. If not, a cystotomy should be done and further estimations carried out. When the blood urea and figures fall to under 30 prostatectomy may be done, the general condition of the patient being in other respects satisfactory. Preliminary cystotomy and regular antiseptic instillation is a method which deals with cases of impaired renal function, whether due to back pressure and renal infection.

Sapremic Glycosuria.—Higginson had a large carbuncle on the back of his neck and then discovered that he also had glycosuria. Contrary to the usual belief, the carbuncle was the cause of the glycosuria and not vice versa, in other words, it was a case of sapremic glycosuria. In sapremic glycosuria the sugar is relatively small in quantity. The largest quantity recorded by Higginson as having been passed in twenty-four hours is 1,400 grains (or 3 ounces). In diabetes the patient commonly passes from one-half to three-quarters pound, say, from 4,000 to 6,000 grains daily. Consequently, in sapremic glycosuria there is an absence of the great diabetic symptoms—namely, no hunger, no thirst, no emaciation, no polyuria.

Edinburgh Medical Journal

February, 1921, **26**, No. 2

Intestinal Tuberculosis. Analysis of Forty-Three Cases. F. M. Caird.—p. 73.
*Carcinoma of Stomach in a Boy Aged Fifteen. D. A. Laird.—p. 98.
Two Cases of Renal Decapsulation in Subacute Diffuse Nephritis. F. D. Boyd.—p. 104.
*Decapsulation of Kidney for Chronic Nephritis. J. S. Fowler.—p. 111.
*Chronic Nephritis in Children Treated by Decapsulation. J. W. Simpson.—p. 115.
*Decapsulation for Subacute Nephritis. J. Fraser.—p. 117.

Carcinoma of Stomach in Youth.—Laird cites the case of a boy, 15 years of age, without suggestive heredity or personal medical history, whose complaint was pain of a fortnight's duration, with occasional vomiting, the nature of whilh, and whose relation to the taking of food, had not been specified. There was a palpable epigastric tumor. The liver was enlarged. There was leukocytosis. Both test meal and vomit showed absence of free hydrochloric acid. There was no roentgen-ray evidence of value. There was no record of testing the stools for blood. Progressive and rapid loss of weight occurred. Laparotomy was performed and an inoperable growth was found. This was followed by a temporary improvement, but the disease terminated in death. Microscopic examination showed a columnar cell carcinoma of the lesser curvature of the stomach, with extensive metastases to lymph glands—gastric, pyloric, aortic, mediastinal—to the liver, the pancreas, and the diaphragm.

Decapsulation of Kidney for Nephritis.—In the three cases cited by Fowler markedly beneficial results from the operation of decapsulation of the kidney were noted in relieving the urgent symptoms of chronic parenchymatous nephritis.

Four cases are reported by Simpson illustrating the beneficial results in the chronic nephritis of childhood. One patient was aged 4 years; three were aged 9 years.

Fraser is convinced that the benefit derived from this operation is so great as to justify decapsulation of the kidneys

in cases of chronic nephritis which do not improve under medical treatment. It is advisable in all cases to operate on both kidneys, because while stripping one kidney often relieves all the symptoms for the time, the albuminuria continues, whereas the double operation offers a prospect of a cure. There is no advantage, but rather the reverse, in decapsulating both kidneys at the same time. The second operation should be postponed until the first has been recovered from.

Journal of State Medicine, London

February, 1921, **29**, No. 2

Theory, Conditions and Consequent Practice in Ship Disinfection. W. M. Willoughby.—p. 36.
Cancer as Public Health Problem. A. Charles and J. C. McWalter.—p. 46.
*Vaccination Against Bacillary Dysentery with Ether Vaccine. H. Vincent.—p. 54.
Prevention and Specific Treatment of Pneumonia. R. Cole.—p. 58.

Vaccination Against Bacillary Dysentery.—The vaccine used by Vincent is prepared by sterilizing young cultures by ether. It is an antidysenteric vaccine (polyvalent) and contains five strains of Shiga type, one of the Strong type, two of the Flexner type and four of type Y. Employed in experiments on rabbits this ether vaccine conferred a complete immunity against a positively virulent infection as proved by controls. The reaction to the injections was very slight. Of 2,175 men who received from 500 to 750 million of bacilli, fifteen suffered from either headaches or giddiness, six had temperatures of 38 C., one had a temperature of 40 C. with herpes labialis. Local pain was slight or completely absent. Neither edema nor redness were present, nor were the glands affected. On the day following the injection, fifteen men, who had failed to report sick, although in the initial stages of dysentery at the time they were injected, presented themselves suffering from very mild attacks of dysentery. During the five days following the vaccination, the number of cases continued to increase. After this there followed a rapid decline, and the epidemic ceased in a few days. The protection afforded may be indicated by the fraction $\frac{1}{11.75}$, that is to say the vaccinated are twelve times less attacked than the nonvaccinated. Vincent suggests that the injection of a more intense antigen would lead to an even more favorable result.

Lancet London

Feb. 26, 1921, **1**, No. 5087

International Organization and Public Health. G. S. Buchanan.—p. 415.
*Cerebrospinal Fluid in Disseminated Sclerosis. D. K. Adams.—p. 420.
Analysis of Gastric Contents, Obtained by Fractional Method. S. W. Cole and W. J. Adie.—p. 423.
Skin and Its Reactions. A. J. Hall.—p. 426.
*Two Cases of Congenital Hypertrophic Pyloric Stenosis Saved by Early Operations. W. G. MacDonald.—p. 428.
Standardization of Tuberculin. A. J. Eagleton.—p. 429.
Probable Case of Cerebral Ventricular Hemorrhage, Associated with Marked and Persistent Convulsions. E. J. Parry and O. K. Williamson.—p. 431.
Case of Diaphragmatic Hernia. A. E. Keown.—p. 431.
Two Cases of Relapsing Fever. R. Nixon.—p. 432.

Cerebrospinal Fluid in Disseminated Sclerosis.—It is held by Adams that the cerebrospinal fluid picture in disseminated sclerosis is as follows: a normal cell count, a negative Wassermann reaction, a syphilitic or paretic reaction to colloidal gold, and in most cases (83 per cent.) a normal protein content. The absence of a positive Wassermann reaction in the great majority of cases and the absence of pleocytosis are in accordance with the view that this disease is not of syphilitic origin. On the supposition that the origin might be spirochetal treatment was carried out by spirocheticidal drugs. In practically every case under treatment modifications toward a negative result of the colloidal gold reaction were noted. As regards clinical effects of such treatment, no improvement resulted in advanced cases of the disease, but prolonged treatment produced amelioration of early cases, and in one or two instances the results were marked. With reference to early diagnosis, emphasis is laid on the evidence of the cerebrospinal fluid picture and the absence of the abdominal reflex.

Hypertrophic Pyloric Stenosis.—MacDonald insists that early surgical treatment is indicated in all cases when hypertrophic pyloric stenosis has been diagnosed. Ramstedt's operation appears to be the only procedure which restores the pylorus to a condition approaching the normal. The general practitioner accustomed to surgical technic can successfully perform Ramstedt's operation even in the most severe cases of pyloric stenosis.

Medical Journal of South Africa, Johannesburg

November, 1920, **16**, No. 4

Some Public Health Problems as Viewed from South African Standpoint. L. G. Haydon.—p. 63.
Invertebrate (Molluscan) Hosts of "Schistosoma mansoni" and "Fasciola hepatica" in South Africa. A. Porter.—p. 75.
*Silicosis and Suicide. W. Watkins-Pitchford.—p. 76.

Silicosis and Suicide.—Watkins-Pitchford says that the view appears to be gaining ground among people generally that suicide is of unduly frequent occurrence among sufferers from silicosis. The conclusion which the available evidence appears to warrant is that silicosis does not specifically predispose to suicide, either directly by any particular mental effect of the disease, or indirectly by the production of insanity culminating in an act of self-destruction.

Tohoku Journal of Experimental Medicine, Sendai, Japan

December, 1920, **1**, Nos. 5 and 6

Variations in Biologic and Other Properties of Long Lived Red Blood Cells. J. Sogen.—p. 367.
Action of Cocain on Blood Vessels of Frog. K. Abe.—p. 382.
Exodic Excitation and Inhibition. K. Tashiro.—p. 387.
Effects of Restriction of Pulmonary Artery on Blood Pressure and on Volume of Some Organs, and Cause of Fall of Arterial Blood Pressure, Due to So-Called "Paradoxical Vasodilatatory Substances." K. Abe.—p. 398.
Cholesterol and Lecithin in Chylous Urine. M. Sano.—p. 448.
Simplification of Colorimetric Method by Utilizing Coloring Substances. M. Takata.—p. 460.
Agglutination of Typhoid Bacillus in Course of Immunization of Guinea-Pigs with Paratyphoid B. Bacilli. K. Aoki and T. Konno.—p. 475.
Subspecies of Proteus Bacilli; Crossed Agglutination as Aid in Differentiation of Bacterial Subspecies. K. Aoki and N. Iizuka.—p. 493.
Ester-Splitting Properties of Peripheral Nerves. S. Ukai.—p. 519.

Tropical Medicine and Hygiene, London

Feb. 15, 1921, **24**, No. 4

*Treatment of Smallpox by External Application of Potassium Permanganate. A. Balfour.—p. 37.
*Improvement of Oiling Fluids for Antimosquito Work. W. N. Leak.—p. 37.
Organism Resembling Bacillus Pestis. W. A. Young.—p. 40.

Potassium Permanganate Applications in Smallpox.—Treating smallpox by the external application of a solution of potassium permanganate was introduced by Dreyer in 1910. Bender of Breslau regards it as superior to every other therapeutic measure in smallpox. His technic is as follows: When the patient is admitted to hospital his whole body is painted over with a freshly prepared saturated 5 per cent. solution of potassium permanganate. On each successive day the same solution is applied unless the skin is found too sensitive, in which case a weaker solution is employed, one of 1.5 per cent. being often suitable. This treatment, especially if employed early, is of signal service in lessening the suppurative process and adding to the patient's comfort. It is also said to prevent complications, the formation of bed sores and the occurrence of general sepsis. Septic fever is thus avoided and the recovery rate improved. As the suppuration is mitigated the pitting of the skin is reduced. Further, it possesses hygienic advantages by lessening the risks of infection.

Effect of Castor Oil on Spreading Power of Paraffin in Antimosquito Work.—The observation recorded by Leak consisted in noting the extraordinary effect which small additions of castor oil have on the spreading power of paraffin. Castor oil is ordinarily said to be insoluble in mineral oils, but in a warm climate a mixture up to 2 per cent. can be made which will not separate out appreciably in a week, while in cool climates only about 0.5 per cent. will remain suspended for any length of time. However, the addition of very small amounts of castor oil makes a very decided difference on the behavior of the film. As little as 0.1 per cent. produces a very much more active film in every way, and the effect is more marked the higher the concentration.

Archives Médicales Belges, Liége

December, 1920, **73**, No. 12

Present Status of Psychotherapy. R. G. M. Laell.—p. 979.
*Serotherapy of Purpura. C. Cohen.—p. 988.
*Radioscopy of the Heart. H. Houdmont and L. Dautrebande.—p. 993.

Serotherapy of Purpura.—Cohen points out the resemblance between purpura and the phenomena of idiosyncrasy. As the symptoms are much alike, the same treatment may prove effectual in both, and Cohen realized this in the six cases described. The six children had been having recurring purpura with rheumatoid pains, fleeting edema, bad general condition and albumin, tube casts and erythrocytes in the urine at times. These waves of symptoms returned every week or two in the first case described, rebellious to all treatment, including calcium chlorid. After three months of ineffectual measures, the boy was injected with 4 c.c. of his own serum at three day intervals, a series of four injections, with another series a few weeks later. There has been no return of the purpura since, his health being excellent. In another child the purpura developed after a severe fright, and he was given four subcutaneous injections of serum from his mother's blood, with a second series two weeks later, and complete cure. In all these cases the number of leukocytes was high and complete recovery followed this serotherapy in every case except that one child died from intercurrent pneumonia after the injections. This child had been treated with diphtheria antitoxin as the most convenient form of serotherapy. In all the cases the improvement became manifest toward the third or fourth injection of the serum, that is, about the tenth day, which is the usual period for production of antibodies.

Radioscopy of the Heart.—Houdmont and Dautrebande give charts showing the most convenient method for radioscopy of the heart, which, they urge, should be applied as a routine measure. It is not instructive unless the orthodiagraphic method is used.

Archives de Médecine et de Pharm. Militaires, Paris

January, 1921, **74**, No. 1

Apparatus for Fracture of Long Bones. Maisonnet.—p. 3.
Recent Progress of Medicine. V. de Lavergne.—p. 119.

Bulletin de l'Académie de Médecine, Paris

Feb. 15, 1921, **85**, No. 7

Graduated Percussion. G. Hayem.—p. 197.
*Radium Treatment of Leukemia. L. Rénon and Degrais.—p. 207.
*Organotherapy in Uremia. Rémond and Menvielle.—p. 210.

Radium Treatment of Leukemia.—Rénon and Degrais report the outcome for ten years in eight cases of myeloid leukemia treated by radium exposures of the spleen. The immediate results were remarkable; the patients seemed cured. But in from two to eighteen months the signs of leukemia returned, and the curietherapy seemed to lose its influence. The myelocytes seemed to have developed a progressive resisting power to the radium rays. The conclusions from these and other experiences in this line are that to postpone recurrences and attenuate them, the irradiation should be as intense as possible, with longer intervals. The bone marrow also might be exposed, if there is reason to assume fibrous transformation of the spleen. They regard the destructive action of the radium and roentgen rays as closely analogous. They are confident that by this means survivals of five or six years, with every aspect of health, can be obtained.

Organotherapy in Uremia.—Rémond and Menvielle report that the Ambard constant showed a decided modification for the better in seven cases of uremia under the influence of parathyroid extract treatment. From the average of 0.44 before treatment it changed to an average of 0.085. Thyroid extract had the opposite effect, the coefficient from about 0.074 before, becoming 0.12 or 0.289 afterward. Under parathyroid treatment the urea in the blood dropped from 1.9 to 0.94 gm. (ten injections of the extract on alternate days with two cachets daily). In six cases the residual nitrogen in the blood that had averaged 0.20 before the parathyroid treatment, averaged only 0.074 afterward. The conclusion from the twelve cases of azotemia studied are that parathyroid treatment is harmless, and combats uremic intoxication.

Bulletin Médical, Paris

Feb. 2-5, 1921, **35**, No. 6

*Radiography in Gastro-Enterology. A. Sorel.—p. 103.
*Fasting and Antibodies in the Tuberculous. G. Ichok.—p. 106.

Feb. 19, 1921, **35**, No. 8

Auscultation in Mitral Stenosis. C. Lian.—p. 147.

Radiography in Gastro-Enterology.—Sorel insists that research on normal subjects will perfect radiology. The radiologist should complete his study by palpation when necessary. The contrast meal should have alimentary value, that is, it should contain carbohydrates, protein and fat and it should have a palatable taste. He emphasizes further that the different stages of the digestive canal must be examined as a whole, on account of the complicated reflex interplay.

Influence of Fasting on Antibodies in the Tuberculous.—Ichok reports research on three rabbits.

Bulletins de la Société Médicale des Hôpitaux, Paris

Jan. 28, 1921, **45**, No. 3

Present Status of Cerium Salts in Treatment of Tuberculosis. A. Frouin.—p. 49. Id. H. Grenet and H. Drouin.—p. 56.
*Cold as Factor in Sclerodermia. H. Dufour and Debray.—p. 58.
*Prophylaxis of Anaphylaxis. J.-A. Sicard and J. Paraf.—p. 60.
*Herpes Zoster in Anus Region. L. Rénon and P. Blamoutier.—p. 65.
Weak Pulse with Mitral Stenosis. G. Étienne and G. Richard.—p. 68.
Portable Sphygmomanometer. P. Menard.—p. 71.
*Syphilis Simulating Epidemic Encephalitis. G. Guillain, P. Jacquet and P. Lechelle.—p. 74. Idem.—p. 79.
*Pneumocolon for Roentgenoscopy. M. Faure-Beaulieu and H. Béclère.—p. 81.
Primary Pneumococcus Septicemia. Menetrier and Levesque.—p. 85.

Cold as Factor in Sclerodermia.—Dufour and Debray report the case of a woman, now 28, who has developed generalized sclerodermia in the course of the last six years. The first symptom had been the blanching of her fingers when they were exposed to cold, and the sclerodermia had then gradually become installed. They wrapped the woman's arms in cotton, with oiled silk outside, thus keeping in the warmth of the arm. This continuous warmth soon transformed the skin to normal conditions instead of the previous leathery aspect and stiffness. This method of keeping the skin constantly warm in treatment of sclerodermia—which was, they say, introduced by Dufour in 1908—has abolished sclerodermia, sclerema and edema from the pathology of the newly born. This treatment is further evidence of the influence of chilling as a factor in sclerema, paroxysmal hemoglobinuria, jaundice of the newly born, etc.

Anaphylactic Shock.—Sicard and Paraf cite a long array of research workers who have apparently demonstrated that anaphylactic shock and the shock sometimes observed after giving neo-arsphenamin are manifestations of flocculation in the serum and change in the electric charge of the colloids in the serum. The physical balance is upset, and the flocculation obstructs the capillaries, entailing fulminating asphyxia of the tissues. By preventing this physical upset, this *colloïdoclasie sérique* can be warded off, and they have found that injection by the vein of from 0.5 to 2 gm. of sodium carbonate, in 40 or 60 c.c. of saline or distilled water, is effectual, and there is no obliteration of the vessel at this dilution. Their experimental and clinical experience has also shown that sodium bicarbonate by the mouth, 10 to 15 gm. fifteen minutes beforehand, will ward off the anaphylactic shock to some extent but not so completely as the carbonate by the vein. Sodium hyposulphite seems to have a similar antianaphylactic action (Lumière). Repeated injection of a foreign serum or protein into man or animals induces the formation of precipitins in the subject's serum, but addition of a little sodium carbonate checks all precipitation in vitro. This experience can be repeated in the living subject. Even if his serum is known to be rich in precipitins, no precipitation occurs if he is given 1 gm. of sodium carbonate in 30 to 40 c.c. of fluid by the vein fifteen minutes before the test. This modern assumption of *réactions colloïdoclasiques* throws light on the familiar beneficial action of sodium bicarbonate in certain constitutional morbid conditions.

Herpes Zoster Encircling Anus.—The zona did not spread beyond this circle around the anus, but it had been preceded by symptoms for three or four days suggesting acute menin-

gitis in the woman of 35. The primary polymorphonucleosis in the cerebrospinal fluid testified to the acute involvement of the meninges, but then lymphocytosis supplanted it, and this has persisted for three months to date.

Syphilis Simulating Epidemic Encephalitis.—There is danger nowadays of ascribing to epidemic encephalitis nervous disturbances of other origin, as was done in two cases of syphilitic disease of the midbrain here described. One woman of 40 had been having neuralgic pains in the right side of the head and face, with ptosis of the ocular muscles, for nearly three weeks. She was apparently healthy otherwise, with four healthy children, but Wassermann tests were positive, and under specific treatment, improvement was realized. In a second case described, the neuralgic pains, ptosis, etc., on one side of the head, with erratic pains in neck and arm, and mental and physical weakness were accepted as signs of epidemic encephalitis but the lumbar puncture fluid gave a positive Wassermann reaction.

Pneumocolon.—Insufflation of the colon with carbon dioxid is often a great help in roentgenoscopic exploration of the liver and spleen. This is readily absorbed and thus is free from the drawback of oxygen and air for insufflation of the bowel. For the peritoneum it is no better than the other gases, as the disturbance from the insufflated gas is usually felt at once. Two cases are described in which 1.8 liters of oxygen had been gently injected into the peritoneal cavity and intense pains developed; in one case they came on as the patient tried to get up; in the other the pains developed while reclining, and they kept up for a week.

Journal de Médecine de Bordeaux

Feb. 10, 1921, **92**, No. 3

*Active Mobilization of Purulent Arthritis. A. Charrier.—p. 63.
*Embolism in the Retina. C. Lafon.—p. 66.
*Heat Stroke. Cheyrou.—p. 67.
Training Teachers for Physical Culture. Pierre-Nadal.—p. 68.

Active Mobilization of Purulent Arthritis.—Charrier warns that Willems' method is not applicable to all cases of purulent arthritis of the knee. The principle is that the best means to empty a joint of its secretions is by immediate and active mobilization. This is true theoretically, but it is often impossible to realize in practice on account of the intense pain therefrom. Charrier describes three cases in which the method actually aggravated conditions, and the fever did not drop until after the joint had been immobilized. Ineffectual mobilization is worse than none.

Embolism in the Retina.—Lafon describes a case in which vision was lost first in one eye and then in the other from obstruction of the central artery of the retina in a man of 66 with arteriosclerosis.

Heat Stroke.—In Cheyrou's case the symptoms from the heat stroke simulated an attack of pernicious malaria, with aphasia, except for the normal size of the spleen and deviation of the head and eyes. Artificial respiration had to be kept up for a long time, with the measures suitable for a pernicious attack of malaria in addition. The man was superintending road building in a French colony.

Journal d'Urologie, Paris

October, 1920, **10**, No. 4

*Anesthesia of the Bladder. P. Noguès.—p. 249.
Operative Case of Bifurcation of Urethra. T. Rietz.—p. 259.
Urinary Calculi in Soldiers. C. Gauthier.—p. 269.
Perforation of Urethra by Projectile. Lévy-Weissmann.—p. 271.
Bullet Voided in Urine; Two Cases. A. Grandjean.—p. 275.

Anesthesia of the Bladder.—The resistance of the bladder to general and spinal anesthesia is explained by Noguès as the natural result of the independence of the diseased bladder from the nerve centers. The only stimulus it obeys is that from distention of its walls. Refraining from anything liable to induce distention of any part of the bladder wall is the secret of success in intravesical maneuvers. General anesthesia does not suppress this functional sensibility to distention, but it attenuates it, while local anesthesia within therapeutic range does not modify it in the least. With cystitis or other anatomic lesion, this functional sensibility to distention is magnified; even the slightest contact with the wall may induce the muscular contraction for micturition. By curing the cystitis, this extra excitability may be reduced. Silver nitrate has proved its usefulness for this to such a point that it may be called the best of local anesthetics for the bladder.

Paris Médical

Feb. 12, 1921, **11**, No. 7

*Meningitis in Infants. L. Caussade and A. Rémy.—p. 129.
*Asepsis in Surgery. R. Sorel.—p. 132.
*Serotherapy to Aid Consolidation of Fractures. T. Pétrault.—p. 136.
*Sign of Pregnancy. Dezwarte.—p. 139.

Meningitis in Infants.—Caussade and Rémy ascribe great importance to the bulging of the fontanel as an early sign of acute hydrocephalus developing from meningitis in an infant. This is characteristic of ventriculitis. In a case described, the 3 months' old infant had been sick for a month with a vague infectious condition until the diagnosis was rendered possible by hydrocephalus, the fifty-second day. At once meningococcus antiserum was injected directly into the ventricle through the fontanel, and the child improved, but it died nine days later. This long latent phase of meningitis is frequently observed in infants. Other special features are the lack of fever and the alternations of improvement and aggravation in the general condition. The meningitis manifests itself insidiously. The openings for communication in the infant skull are so small that they become blocked very readily. This child might have been saved perhaps if the ventricle had been punctured as soon as hydrocephalus was suspected. Some advocate intraventricular serotherapy when the antiserum cannot be injected by the lumbar route, without waiting for signs of hydrocephalus. Others urge the intraventricular injection from the first, whenever cerebrospinal meningitis is diagnosed in an infant. Quite large amounts of the fluid may be withdrawn without apparent harm. Some advise lumbar puncture at the same time as the ventricular puncture, injecting the antiserum into the lateral ventricle until it flows from the needle in the lumbar region, thus rinsing out the whole canal. The injections must be made in the ventricles in turn, generally once every second day. In conclusion they mention the possibility that there may be a focus of meningitis at the base of the brain which escapes the action of the serotherapy. This might be reached by Bériel's sphenoidal puncture, but this would be difficult in an infant.

Asepsis of the Field of Operation.—Sorel discards all antiseptics and uses gloves and a varnish for the field of operation. He makes the varnish of 20 gm. mastic; 50 gm. chloroform and 1 gm. linseed oil, and paints the field of operation with this, and lays over it a compress which sticks to the skin, each side of the incision. He has thus discarded all disinfectants for his hands and the field of operation for six or seven years, with increasing satisfaction. He does not apply any dressing to an uncovered surface, merely coating it with varnish. Antiseptics, he insists, never actually sterilize the skin, but facilitate infection by irritating it.

Serotherapy for Delayed Healing of Fractures.—Pétrault succeeded in retarding the healing of fractures of long bones in seventeen dogs by keeping them on an inadequate diet. He then injected the dogs with serum from other dogs, normal otherwise, that had recently recovered from fractures with normal consolidation. The results demonstrated, he says, that this serotherapy had an unmistakable effect in promoting the healing of the fracture. The serum was most effectual the more recent the fracture. Horse serum showed no efficacy in this line. He also describes four clinical cases in which fracture of the femur or tibia had refused to heal properly under long treatment. Then he injected serum from a person recently recovered from a fracture with good consolidation, and in a few days the fractures began to heal. Not only the consolidation was complete but the function seemed perfect in the cases reported, in from sixteen to twenty days. This method of serotherapy was first applied by Guyot of Bordeaux.

Sign of Pregnancy.—Dezwarte comments on the movability of the normal uterus and the importance of noting whether the palpating finger in the vagina feels the side of the cervix first, then the os, then the other lip of the cervix and the

vaginal culdesac, or the finger meets the center of the cervix on the axial line of the vagina. This difference shows that instead of the uterus being in the normal anteflexion, at a more or less right angle to the vagina, it lies in a line with the axis of the vagina, with tendency to slide down into the latter. This position indicates that the uterus is heavier than normal. The uterus is rendered heavy by the menstrual congestion preceding the onset of the menses, or else from the embedding of an ovum. If the menstrual discharge does not follow within a few days, the presumption of incipient pregnancy is justified. If the uterus is found at the normal angle to the vagina and menstruation is not evident, general treatment for amenorrhea should be applied.

Feb. 26, 1921, **11**, No. 9

Iron Deposits in Liver. A. Gilbert and H. Surmont.—p. 161.
*Graft of Toe on Thumb. R. Grégoire.—p. 164.
*Peptone Treatment of Hemophilia. A. Radovici and S. Iagnov.—p. 167.
Technic for Artificial Pneumothorax. R. Hervé.—p. 169.
*Intestinal Hemorrhage at Kelotomy. R. Ducastaing.—p. 171.

Graft of Big Toe to Restore Thumb.—Grégoire implanted the stump of the metacarpal bone of the right thumb in the cavity left by resection of the first right metatarsal bone, and immobilized in plaster the hand and foot thus united. The patient was a boy of 15, and the plaster was suspended by pulleys and weights. The results are highly satisfactory, but an osteotomy was required later to twist the toe around. This could have been avoided if the left toe had been used. The supple tissues of the young adapt themselves remarkably to the contortion required.

Peptone Treatment of Hemophilia.—Three brothers of the hemophiliac man of 36 were hemophiliacs, as also his two uncles, two of his five nephews and one great nephew. Subcutaneous injection of 5 c.c. of a 5 per cent. peptone solution reduced the coagulating time from two hours to half an hour on the slide and from five to two hours in the tube. But the effect did not last more than twenty-four hours. Even this transient effect, however, may influence favorably the local accidents from hemophilia. Injected by the vein, the peptone did not modify the coagulating time, while the first three of the six intravenous injections induced a severe reaction. The peptone solution is made with 5 gm. peptone; 0.5 gm. sodium chlorid, and 100 gm. of distilled water at boiling point; filtering and sterilizing at 120 C. Six subcutaneous injections were made in the two weeks, but the coagulating time returned to the former status the following day each time.

Intestinal Hemorrhage at Kelotomy.—The strangulation was recent and very tight, and the hernial sac contained several loops of the small intestine. Half an hour after the herniotomy half a basinful of blood was voided from the bowel, with a smaller hemorrhage later, followed by smooth recovery.

Presse Médicale, Paris

Feb. 12, 1921, **29**, No. 13

*Alimentary Hemolysis in Diabetes. F. Widal, P. Abrami and N. Iancovesco.—p. 121.
Sacralization of Fifth Lumbar Vertebra. E. Ledoux and G. Caillods.—p. 123.
Persisting Ductus Arteriosus. Constantinescu and Danulescu.—p. 124.
Diuretic Medication. L. Cheinisse.—p. 126.

Alimentary Hemolysis in Diabetes.—By having diabetics ingest 20 gm. of glucose in 200 c.c. of water, fasting and counting the leukocytes every twenty minutes for an hour and a half, a typical *crise hémoclasique* is observed, revealed by the drop in the number of leukocytes. The hemolysis is transient, but the whites sometimes dropped from 7,000 to 3,600; in one patient from 13,800 to 6,600; in another, 7,400 to 5,300. This hemolysis occurred in 97 per cent. of 34 diabetics tested, while none of 20 other persons, healthy or with various other diseases. showed any trace of the transient phase of hemolysis, even after ingestion of up to 100 gm. of glucose. In 20 others with evident disease of the liver, there was no hemolysis except in 6, and in these only with very large doses; in 5 in this group of 6 the liver disturbances were of cardiac origin. The *crise hémoclasique* elicited sometimes in diabetics with as little as 3 or 5 gm. of glucose, or even 2 gm., in one case, was pronounced. It seems to be a new fact in biology, the authors remark, and one that can be easily determined at any time, as a *stigmate humoral* of diabetes. Lactose, levulose and saccharose induce the same transient hemolysis, but it is not quite so intense. The hemolysis usually becomes evident in not less than forty minutes but had always subsided in their tests within an hour and a half. A reactional leukocytosis follows the leukopenia. (A study of digestion hemolysis as a sign of insufficiency of the liver was summarized in these columns, Jan. 22, 1921, p. 275.)

Feb. 16, 1921, **29**, No. 14

*Asthenia of Syphilitic Origin. P. Merklen, A. Devaux and A. Desmoulière.—p. 133.
*Trauma of the Uterus at Term. P. Constantinesco.—p. 135.
*Fracture of the Acetabulum. J. Dupont.—p. 135.

Asthenia of Syphilitic Origin.—Evidence is presented to show that asthenia in many cases is the result of a polyglandular endocrine derangement of syphilitic origin. The syphilis may be acquired or inherited, the disease ignored or supposed to have been cured, or the asthenia may be the only manifestation of inherited syphilis. The patients—generally women—complain of continual or intermittent weariness. They are not sick enough to be kept at home, but they have to make an effort for everything, and are constantly complaining, and are generally regarded as lazy, or that their troubles are imaginary. With asthenia in a woman, the husband should be examined for syphilis, and in children, the parents. The Wassermann reaction may be positive when extremely sensitive technics are used. But the convincing argument is the way in which the asthenia is thrown off and the whole aspect of life changed for the patient under specific treatment in the majority of cases when kept up long enough. Adjuvants are good but not indispensable; organotherapy is incapable of modifying the syphilitic lesion of the ductless glands. In the experiences of the writers suggestion was excluded. The asthenia may yield to specific treatment before the Wassermann reaction is modified.

Wounds of the Uterus at Term.—Constantinesco commends the slight additional traumatism represented by cesarean section when it is thus possible to save the child and the uterus and hasten the woman's recovery. In the case reported, the woman of 32, at term, was gored by a bull, the horn perforating the uterus. Cesarean section a few hours after the accident allowed suture of the uterine wound after removal of the living child, thus providing ample drainage from above and below. When the operation can be done soon enough to avoid infectious processes, the uterus can be saved, but after delay of a day or two the uterus should be removed.

Fracture of the Acetabulum.—In the case described, the comminuted fracture of the left cotyloid cavity allowed the head of the femur to slide into the pelvis, and healing was defective. Even if it had been possible to apply extension to bring the femur into place, it is a question whether it could have been maintained there. A plaster cast had been applied for several months, and the man was able to work for five years, but the use of the hip is growing painful and he is unable to stand long. There is no ankylosis; no operation is suggested at present.

Feb. 19, 1921, **29**, No. 15

Inaugural Lecture of Pediatrics Course. Nobécourt.—p. 141.
*Action of Epinephrin in Heart Block. R. Lutembacher.—p. 145.
*Treatment of Epidemic Encephalitis. L. Cheinisse.—p. 146.

Action of Epinephrin in Heart Block.—Lutembacher gives some tracings showing the effect of epinephrin on the heart with total and partial heart block. The beat of the auricles and of the ventricles is each accelerated, but independently of each other. The consequences are liable to be disastrous. The stimulating effect on the heart is beyond question, but its effect on conductivity may be slight or nil. Intravenous injection of epinephrin while accelerating the ventricle beat often entails long pauses followed by syncopes. The most dangerous feature of the epinephrin treatment, however, is that after the phase of acceleration the heart beat may be seriously retarded for several days. This inhibition may be dangerous in case of complete dissociation of the auricle and ventricle beat.

Treatment of Epidemic Encephalitis.—Cheinisse reviews the different publications on treatment, and says that none

have stood the test of time except the turpentine fixation abscess. Pic published excellent results with this, Feb. 3, 1920, and Netter has been advocating it since March, 1920. The abscess developed in sixty-seven of eighty-three cases treated in this way, and the mortality in this group was 7.46 per cent. In the sixteen other cases in which the injection did not induce the formation of an abscess, fifteen died. The turpentine injection should be made early, recovery having been more rapid and more complete the earlier this treatment had been instituted. If one injection does not answer the purpose, another can be made in forty-eight hours and a third two days later. The first injection is usually made in the subcutaneous tissue of the abdominal wall, half way between the left iliac spine and the umbilicus. It is better to use old turpentine, and inject 1 or 2 c.c. in adults and 0.25 to 0.5 c.c. for children. The only other measure that is advocated is the use of hexamethylenamin which Netter advises to give by mouth. Injected into a vein it disappears from the blood too quickly, and to keep the arachnoid cavity under its influence small doses by the mouth, frequently repeated, seem to be more effectual. On account of possible danger to the kidneys from this drug, he gives it in declining doses from 2 to 1 gm. Netter has gradually abandoned other measures, except that he may give 3 or 4 drops of epinephrin every three hours to combat asthenia. Pic recommends subcutaneous injection of epinephrin when the heart or oblongata seem weak. With delirium and neuritic pains, hot baths every three or six hours may be useful. In conclusion Cheinisse remarks that the so-called sequelae of epidemic encephalitis generally represent a chronic form, with sudden flaring up. Pic combats them with tepid hydrotherapy, revulsion to the spine, while reducing toxic action with appropriate diet, and giving hexamethylenamin at the same time.

Progrès Médical, Paris

Feb. 19, 1921, **36**, No. 8

*Clinical Import of Ecchymoses. A. Bréchot.—p. 79.
The Medical Secret. Garçon.—p. 81. Conc'n.
Epidemic Hiccup Plus Acute Otitis. Loeper and Forestier.—p. 82.

Clinical Import of Ecchymoses.—Bréchot emphasizes that a tardy and extensive ecchymosis after an injury is almost a certain sign of fracture of the bone. With extracapsular fracture of the neck of the femur and trochanter, the crushing of the spongy bone causes an extensive ecchymosis on the outside of the thigh, but with intracapsular fracture the hemorrhage is slight, and it usually presents only in the base of the inguinal triangle. Tearing off of the external malleolus may entail a linear ecchymosis which may be the only symptom. With a sprain, the ecchymosis encircles the external malleolus and extends downward. Fracture of the heel bone causes considerable ecchymosis which surrounds the ankle and spreads upward and down on the sole. Ecchymosis at the umbilicus suggests a wound of the convex surface of the liver. The blood from a superficial lesion develops an ecchymosis within a few hours. It requires twenty-four or thirty-six hours for it to infiltrate the skin from a lesion in the subcutaneous cellular tissue. Deeper than this, it may take from three to six days to appear. The ecchymosis is particularly instructive with fractures of the skull. A horse-shoe ecchymosis of the palate is a symptom of fracture of the upper jaw. An increase in the blood pressure may induce an apparently spontaneous ecchymosis, likewise vasomotor disturbance and trophic changes in the vessel walls.

Schweizerische medizinische Wochenschrift, Basel

Feb. 10, 1921, **51**, No. 6

*Origin and Growth of Kidney Stones. R. Schweizer.—p. 121.
*Retrobulbar Neuritis. J. Strebel.—p. 123.
*Removal of Tattooing. P. Cattani.—p. 128.
Epidemic Encephalitis at Geneva. G. Piotrowski.—p. 132.
Treatment of Third Stage of Labor. R. von Fellenberg.—p. 135.

Origin and Growth of Kidney Stones.—Schweizer urges repeated radioscopy of kidney stones to learn their origin and growth.

Retrobulbar Optic Neuritis.—Strebel calls attention to the importance for the prognosis of a change in the shape of scotoma, especially in diabetics. Axial neuritis of chronic development shows an oval blind area in the visual field for red and green. In severe but benign cases of the acute form of axial neuritis, the scotoma is pericentric and star-shaped. This four-point star shape is generally the expression of inflammation from infection, or of toxic action or both. The oval chronic form is the manifestation of dystrophia and degeneration, and this diabetic papillomacular neurodystrophia is of grave prognosis. He found it once in an operative case of mammary cancer with multiple metastases. He insists that every practitioner can and should test for central scotoma. A good qualitative test is with the stereoscope, as he explains. Transient scotoma for red and green may follow even the smoking of a strong cigar. This method of examination may be useful in exploring stomach functioning. A large proportion of the cases recorded as amblyopia in diabetics are in fact cases of chronic neurodystrophia.

Removal of Tattooing.—Cattani gives a historical sketch of this subject from the mummies, 4,000 B. C., to modern times, and discusses the different methods for eradication of the pigment. In the days of ancient Rome cantharides were used, and other substances. At present, thirteen different methods can be applied, as he relates, no procedure being applicable to all kinds of cases. The practitioner had best choose, he says, between the Variot method, the galvanocautery under local anesthesia, "harpooning" according to Wederhake, and excision of the pigmented area, giving the details of the technic of each. He has applied the Variot method in a number of cases with complete removal of the tattooing, as a necrotic scab is thrown off after the inflammation from rubbing in silver nitrate and pulverized tannin. The procedure is painful, and takes much patience and time. The harpooning is done through an incision, turning back the skin flaps and picking out the deposits of pigment from the under side of the skin. The skin flaps are turned back and fastened to a small board. This exposes all the deposits of pigment without modifying the skin except for the one incision.

Pediatria, Naples

Feb. 1, 1921, **29**, No. 3

*Bactericidal Power of Intestinal Mucosa. U. Soli.—p. 97.
*The Wassermann Reaction in Human Milk. C. L. Rusca.—p. 121.
Thymic-Lymphatic Status with Rachitis. G. Jemma.—p. 126.
*Mesenteric Cysts in Children. F. Valente.—p. 131.

Bactericidal Power of Intestinal Mucosa.—Soli reports experiments on rabbits which have demonstrated a specific biologic bactericidal action of the intestinal lining epithelium. It varies in intensity, and in different portions of the intestine, being strongest in the jejunum. Any deep pathologic process with complete ischemia arrests this property completely.

The Wassermann Reaction in Human Milk.—Rusca's further experience has confirmed the presence of specific antibodies in breast milk, even in advanced lactation. The reaction is not so sensitive as the reaction in the blood, but a positive reaction in breast milk is strong presumptive evidence in favor of grave and still active syphilis. Under specific treatment the reaction becomes negative in the milk before it disappears from the blood.

Mesenteric Cysts in Children.—Valente knows of only twenty-four cases of this kind in children under 7, and adds to the list another case in a girl of 6. There had been symptoms for seven months before the tumor was discovered and removed. About a third of a liter of fluid was extracted, but the sac could not be shelled out. Its walls were sutured to the walls of the incision, and the cyst was treated until it was deemed safe in a few days to reduce it. The child has been in the best of health since. The tumor had been palpated in the region of the mesogastrium.

Policlinico, Rome

Jan. 15, 1921, **28**, Surgical Section No. 1

*To Prevent Disability After Trauma of Hand. E. Fossataro.—p. 1.
*Primary Tumors of the Vagina. G. Piccagnoni.—p. 8.
*Acute Lumbar Spondylitis. S. Pulvirenti.—p. 27.
*Intradermal Test for Echinococcus Disease. G. Serra.—p. 35.

Prophylaxis of Traumatic Disability of the Hand.—Fossataro discusses the various indications and technics for preventing and curing traumatic disability of the hand. He

remarks in conclusion that the cineplastic methods should be applied as a routine measure for all amputations affecting the use of the hand.

Primary Tumors of the Vagina.—In the first of Piccagnoni's three cases the primary tumor was a fibromyoma, in the second a sarcoma, in the third an epithelioma. Recurrence is the rule with vaginal sarcoma in women, and ulceration and metastasis are common, but the latter is rare in children.

Lumbar Spondylitis.—The young man presented symptoms suggesting acute spinal cord disease. The acute onset of the pain in the lumbar vertebrae, with fever, retention of urine and paresis of the legs had been preceded by ten days in which several furuncles had developed with slight fever. An exploratory lumbar puncture brought pus. It could not have come from the subarachnoid space as there were no signs of purulent spinal meningitis. Staphylococci were found in the extradural pus, and evacuation of the process put an end to all symptoms. The young man has been in good health during the eight months since.

Intradermal Test for Echinococcus Disease.—Serra declares that a positive reaction to intradermal injection of 0.5 c.c. of hydatid fluid is a reliable sign of existing echinococcus disease. There was never any reaction in the twenty-two cases of other diseases tested. If the walls of the cyst are too thick to allow absorption of fluid, or prolonged suppuration in the cyst has modified conditions, the test may not elicit any response, but this is very exceptional.

Feb. 7, 1921, **28,** No. 6

Postencephalitic Insomnia. G. Roasenda.—p. 181.
*Transplantation of Ileocecal Valve. A. Caucci.—p. 186.
*Ether Treatment of Pertussis. G. Genoese.—p. 187.
Some Hematologic Data. V. Giudiceandrea.—p. 190.

Transplantation of Ileocecal Valve.—Caucci reports his success in experiments on dogs in which after resection of the segment of bowel he reimplanted the ileocecal valve in the colon. By this means regurgitation and passage of gases in the five surviving dogs were effectually prevented by the valve action.

Injection of Ether in Whooping Cough.—Genoese states that the results with vaccine treatment in forty children with whooping cough were uncertain. But the results of 0.5 to 2 c.c. of ether, injected deep into the gluteal muscles, were better and more reliable and permanent than with any other measure he knows of to date. He tabulates the details of the twenty cases in which this treatment was applied. From three to six injections were made, beginning at the sixth to fifteenth day of the disease. The ages ranged from 6 months to 11 years. The treatment is kept up for from six to twelve days, making the injections every second day. The first injection may be transiently a little painful; he massages the spot first with a little alcohol and ether. There never was much swelling or any suppuration. The vomiting stops, he says, as if by magic; the general condition improves, and the paroxysms are milder and gradually cease altogether. Diuresis was increased, but the urine kept normal. The effect on the pertussis was equally good in the cases complicated with pneumonia, the pneumonia itself being favorably modified also. Lassalle has recently reported similar benefit in some cases of pneumonia following measles. The heart beat was always transiently accelerated, but by an hour or a little more it was normal once more.

Riforma Medica, Naples

Jan. 29, 1921, **37,** No. 5

Teaching of Internal Medicine. M. Ascoli.—p. 97.
*Primary Lymphosarcoma of the Tonsil. F. Fedeli.—p. 100.
Behavior of Bacillus Prodigiosus in Conjunctival Sac. Mazzei.—p. 102.
*Complement Fixation in Amebic Dysentery. L. Scalas.—p. 103.
Volvulus of Cecum from Membranous Pericolitis. C. Silvan.—p. 104.
*Pulmonary Docimasia. M. Carrara.—p. 108.
*Surgery of the Mamma. E. Aievoli.—p. 110.

Primary Lymphosarcoma of the Tonsil.—Fedeli's patient was a woman of 52, with recovery, after tonsillectomy, during the ten months to date.

Complement Fixation in Amebic Dysentery. — Scalas obtained positive results in four cases of amebic dysentery and negative in four of bacillary dysentery, using a specific antigen derived from the scraps of intestinal mucosa in the patients' stools. It is thus possible by the complement fixation test to distinguish between amebic and bacillary dysentery.

Pulmonary Docimasia.—Carrara is director of the Medico-legal Institute at Turin, and he endorses Icard's method of expanding the small amount of air imprisoned in the alveoli if there has been respiration in a lung, even though it is empty of air at the time of examination. The air can be expanded by transferring the scrap of lung from cold water to hot water near to boiling. As the fragment allows the escape of the air, bubbles rise to the surface. The air inclosed in the scrap expands and distends the scrap, which then floats. Or the fragment can be placed in water previously boiled to expel the gas, and then, by aspiration of the air over its surface, any air contained in the fragment of lung expands. As the pressure is thus reduced, the fragment floats. Another means of testing whether there has been respiration in the lung is to submerge the fragment in an alcoholic solution of potassium hydroxid (15 gm. in 50 c.c. alcohol). The fragment dissolves, but bubbles of air appear on its surface as it is destroyed by the hydroxid, while the surface of the fluid in the test tube is raised to correspond. These three simple tests do not require any instruments; of course they are all negative if air has not entered the lungs.

Surgery of the Mamma.—Aievoli warns that we must not overestimate the value of radium treatment; its field, he thinks, is in inoperable cases and as an adjuvant to operation.

Brazil-Medico, Rio de Janeiro

Jan. 15, 1921, **35,** No. 3

*Cataphrenias. A. Austregesilo.—p. 35.
Reform in Medical Education. Azevedo Sodré.—p. 36. Conc'n.

Jan. 29, 1921, **35,** No. 5

Auto-Bone Implants. J. Gouvêa.—p. 61.
Pathologic Anatomy of Peritonitis. Brito e Silva.—p. 62.

Cataphrenias.—Austregesilo has been teaching for some time that the curable cases of dementia praecox and similar diseases should be classed apart, and for this class he has coined the term cataphrenia. A wide variety of causes, from syphilis to epidemic encephalitis, may induce this spurious dementia praecox. It includes many cases of manic-depressive psychosis of a confusional type, post-traumatic psychoses, curable chronic confusion, delirium of a catatonoid type, confusional hysteric psychoses on an oniric basis, and probably many cases erroneously labeled dementia praecox although the patients finally recovered. He adds that in the classic description of dementia praecox by Kraepelin in his textbook, he alters the description somewhat in each succeeding edition. Time will probably define still more clearly this notion of cataphrenias.

Revista Española de Med. y Cir., Barcelona

December, 1920, **3,** No. 30

*Treatment of Obstruction of the Nose. R. Botey.—p. 639.
Simulation and Concealment of Ocular Anomalies. S. Viusá.—p. 641.
*Scarlatinal Mastoiditis. J. Torrents Castelltort.—p. 646.
*Arthritis of Focal Origin. Ramón Torres Casanovas.—p. 647.

Treatment of Obstruction of the Nose.—Botey protests against the application of the cautery or knife in treatment of hypertrophic rhinitis. This leaves a lesion, and usually entails dry rhinitis. He has avoided this by stretching the passage, and gives illustrations of the instrument with thumb screw with which he forces the inferior turbinated bone out of the way to open the passage wider. He prefers general anesthesia for the purpose, as the sensation from the crushing of the bone is disagreeable even under local anesthesia. He then introduces a rubber tube which holds the bone in its new position while allowing free respiration and expulsion of secretions. A warm 1 per cent. solution of sodium chlorid is used to rinse out the nasal cavity three times a day and the tube can be removed in a week. The results have been permanent for three years to date in the majority of his patients, but in a very few the obstruction returned, compelling finally the usual mutilating treatment.

Scarlatinal Mastoiditis.—Torrents Castelltort reports a case with intense otomastoiditis, with symptoms on the part of the

brain and meninges, which confirms the pathogenic influence of tonsillitis in the development of scarlatinal otitis media. The extension of the process was evidently due to aberrant mastoid cells. Early paracentesis of the tympanic membrane saved the hearing, and recovery was prompt after resection of the base of the mastoid and removal of a sequester.

Arthritis of Focal Origin.—This article is a summary of the work of Americans in curing chronic arthritis by removal of an infectious focus elsewhere.

Revista del Instituto Bacteriológico, Buenos Aires

May, 1920, **2**, No. 5

Normal Horse Serum in Treatment of Diphtheria. R. Kraus and A. Sordelli.—p. 613.
*Experimental Goiter. B. A. Houssay.—p. 629.
*Thyroidectomy in Horses. B. A. Houssay and E. Hug.—p. 637.
Epidemiology of Tuberculosis in Argentina. Carbonell.—p. 653.
Dysenteric Toxin in Birds. A. Sordelli.—p. 665.
*Production of Antiserums. A. Sordelli.—p. 673.
Antibodies Normally in the Blood. A. Sorelli.—p. 679.
Test for Anthrax Antiserums. P. Beltrami and J. M. Grassi.—p. 689.
Antiserum for Borna Disease in Horses. Kraus and Beltrami.—p. 701.
Vaccine Against Contagious Epithelioma in Fowls. Negrete.—p. 713.
Serologic Tests in Various Diseases. Ariazzi and Pico.—p. 721.
*Insect Transmitting Chagas' Disease. E. del Ponte.—p. 729.
Vaccination Against Influenza. R. Kraus.—p. 745.

Experimental Goiter.—Houssay reports that goiter developed in two rats at Buenos Aires that were given exclusively water from a remote focus of endemic goiter. The water in demijohns was three or five or more days en route. Several lots of twenty white rats each were given the water for about six months, but in none of the others was there any tendency to enlargement of the thyroid. No tendency of the kind had ever been noted in 160 normal Buenos Aires rats examined, nor in eighty others dying from various causes. Spontaneous goiter has never been found at Buenos Aires in any laboratory animals. Bircher reported macroscopic goiter in 90.1 per cent. of 484 rats tested in this way in Switzerland.

Thyroidectomy in Horses.—Houssay and Hug report that thyroidectomy seemed to retard the growth of colts, but adult horses did not show much disturbance after the thyroidectomy. Some of the eight animals experimented on died in a few months, apparently from general debility.

Improved Preparation of Antiserums.—Sordelli commends the technic described as allowing rapid preparation of the serum on a large scale. The blood is drawn into a 2.6 per cent. solution of sodium oxalate (40 c.c. to each liter of blood). The plasma is siphoned out after forty-eight hours, and it is then coagulated with 1.2 to 1.4 gm. of calcium chlorid to each liter. This precipitates the oxalic acid, and the serum is then filtered through porcelain. This technic yields serum to 60 per cent. of the blood, and there seems to be less tendency to serum sickness with the antiserum thus prepared.

Insect Transmitting Chagas' Disease.—The anatomy and biology of the triatoma are reviewed, with twenty-eight illustrations of this biting beetle-like insect.

Semana Médica, Buenos Aires

Aug. 5, 1920, **27**, No. 32

*Access to Tonsil Through Side of Neck. L. Mérola.—p. 165.
Research on Dystocia. E. A. Boero.—p. 168. Cont'n.
Diphtheria Antitoxin in Treatment of Epidemic Encephalitis in Child: Recovery. N. Capizzano.—p. 182.
Dermoid Cyst in Both Ovaries. J. González.—p. 183.

Access to Cancer in Nasopharynx.—Mérola relates that he has been advocating access to the tonsil region from the side since about 1906. The key to the neck, as he calls it, is the fibrous band passing from the external sternocleidomastoid muscle to the jaw. Severing this allows access to the salivary glands and the angle of the lower jaw; the latter has to be resected. The various steps of the intervention described and the proper incision are shown in an illustration.

Sept. 9, 1920, **27**, No. 37

*Allen's Method of Treating Diabetes. R. A. Bullrich.—p. 335.
Multilocular Hydatid Cyst of the Liver. C. I. Allende.—p. 338.
Sulpharsenol Treatment of Syphilis. E. Chabroux.—p. 342.
*Does Saline Increase Leukocytosis? G. Segura.—p. 344.
Tuberculosis of Mesenteric Glands. J. C. Navarro.—p. 346.
Case of Epidemic Encephalitis. J. B. Furmento.—p. 351.
Psychasthenia from Acquired Syphilis. G. Bermann.—p. 355.
Ferrán's Vaccination Against Tuberculosis. A. Pulido.—p. 361.

Treatment of Diabetes.—Bullrich has been applying the Allen fasting method for two years, and in many cases has succeeded with it in banishing the sugar from the urine after failure of all other measures for more than ten years. He has found it particularly useful in cases with serious complications, gangrene, etc., and in modifying impending acidosis. He says that it never failed him in his fifty cases.

Does Physiologic Serum Increase Leukocytosis?—Segura has been studying for five years the effect on the leukocytes of injection of saline, and states that it does not increase the number of leukocytes, while in pneumonia in particular it increases the fluid in the circulation and thus overtaxes the heart. It is particularly harmful in nephritis and in pneumonia and other diseases in which there is retention of chlorids.

Siglo Médico, Madrid

Dec. 11, 1920, **67**, No. 3496

Silver Salvarsan. J. Mounis.—p. 937. Cont'd.
History and Present Status of Treatment of Cataract. Márquez.—p. 941. Conc'n in No. 3499, p. 6.
Lime Plus Formaldehyd in Disinfection. F. Valenzuela.—p. 943.

Dec. 18, 1920, **67**, No. 3497

Sanitary Study of Gibraltar. V. M. Cortezo.—p. 957. Conc'n in No. 3501, p. 48.
*Arsphenamin in Multiple Sclerosis. C. Juarros.—p. 960.

Treatment of Sclerosis in Patches with Arsphenamin.—Juarros has been administering arsphenamin in three cases of multiple sclerosis, and reports marked improvement in all, beyond anything he has ever obtained with other measures. He says that it seems to be established that sclerosis in patches is a disease of inflammatory nature, the work of some virus in the blood stream. Injection of spinal fluid and blood from patients with multiple sclerosis induces nervous cerebromedullary disturbances in animals, and a spirochete has been found in the blood of such animals, distinct from the spirochete of syphilis. He cites a number of writers who have published cases of remission of the disease for from two to ten years.

Grèce Médicale, Athens

December, 1920, **22**, No. 2

*The Abdominocardiac Reflex. P. E. Livierato.—p. 173.
The Medical Conceptions of Jurisprudence Among the Romans, Especially in Regard to Slaves. H. Gamalici.—p. 175.

The Abdominocardiac Reflex.—Livierato reports that his own and others' extensive experience has confirmed the instructive increase in the size of the right ventricle by mechanical stimulation of the abdominal nerves. He taps along the median line in the epigastrium, the patient recumbent, the abdominal walls relaxed. The left ventricle shows no change, and there is no change in the healthy, but when the heart elasticity is below par, the right ventricle enlarges from this tapping, and it is thus a very useful sign of the condition of tonus of the myocardium, revealing insufficiency before it has become manifest in any other way. This reflex was always positive in patients convalescing from various diseases. Livierato reports further that when the right heart shows spontaneous dilatation on changing from the recumbent to the erect posture, this is likewise a sign of hypotonicity of the myocardium. The dilatation subsides spontaneously as the subject reclines again. This spontaneous increase of the heart area upward and to the right on change from the horizontal to the erect posture is always a sign of pronounced hypotonicity of the heart muscle.

Archiv für klinische Chirurgie, Berlin

Sept. 20, 1920, **114**, No. 2

*Foreign Bodies in Esophagus. F. Schlemmer.—p. 269. Conc'n.
Malignant Teratoma in Thyroid Region. R. Fritzsche.—p. 317.
*Influence of Roentgen Rays on the Brain. I. H. Brunner.—p. 332.
Transfusion of Blood. G. Schöne.—p. 373.
Rehn's Operative Treatment for Peritonitis. W. Noetzel.—p. 381.
*Disturbances After Ligation of Carotid. Perthes.—p. 403.
Pathology and Treatment of Abscess in Spleen. Wildegans.—p. 416.
Physiology of the Brain (from War Experiences). F. Krause.—p. 443.
Backward Luxation of Lower End of Fibula. Siedamgrotzky.—p. 470.
Carbuncle in the Kidney. Barth.—p. 477.
Principle for Surgery of Large Intestine. F. Pendl.—p. 486.
Racemose Arterial Angioma. L. Schönbauer.—p. 505.
Tearing Off of Mastoid Process. L. Schönbauer.—p. 514.
"Partial Antigens." V. Zweig.—p. 520.

Foreign Bodies in Esophagus.—Summarized on page 900.

Influence of Roentgen Rays on the Brain.—Brunner reports experimental research in this line on four kittens and four puppies. The microscopic sections of the brain thereafter showed a direct effect from the roentgen-ray exposures in certain elements of the cerebellum, while the ectodermal elements of the central nervous system seemed to be resistant to the action of the rays. There is active hyperemia which tends to edema and internal hydrocephalus. The hyperemia leads to hemorrhage, and the blood in the vessels and the extravasated blood contain numerous polynuclear leukocytes —evidently from the action of the roentgen rays on the blood stream and bone marrow. The experimental findings warn against exposure of the brain of the young to the roentgen rays. They warn further against this as the routine procedure for gunshot wounds of the skull.

Ligation of the Carotid.—Perthes' experimental and clinical experience has demonstrated that the focus of softening of the brain after ligation of the carotid is the result of progressive thrombosis or embolism. This in turn is the result of injury of the intima during the ligation and this is preventable, he says. His illustrations show the narrow band of devitalized tissue in the intima with the ordinary ligature. Nothing of the kind is observed when the ligation is done with a broad strip of fascia, the ends of the knot sutured to hold it. A folded strip of fascia is laid lengthwise on the artery, and the fascia is tied over this. The walls of the vessel are thus compressed in a crescent shape, the pressure equalized over quite an extent.

Deutsches Archiv für klinische Medizin, Leipzig

Dec. 21, 1920, **134,** No. 5-6

*Acute Hematoporphyria. H. Günther.—p. 257.
*Tropical Malaria. C. Seyfarth.—p. 298.
Ventricular Allorhythmia with Normal Beat. L. Fuchs.—p. 315.
*Distribution of Indican in the Organism. E. Becher.—p. 325.
Proportionate Urea and Residual Nitrogen Content of Blood and Tissues. E. Becher.—p. 331.
*The Blood in Myxedema. G. Deusch.—p. 342.
Dulness on Sound Side with Pleural Effusion. G. Leendertz.—p. 352. Idem. G. Denecke.—p. 363.
*Nephrosclerosis. T. Fahr.—p. 366.

Acute Hematoporphyria.—Günther reports two typical cases, in a young man and in a woman of 40. A neuropathic tendency, signs of hysteria, and tendency to pigmentation are evident in both, and porphyrin is found in the urine even between the attacks. These begin with abdominal pains, below the umbilicus, with vomiting, constipation and oliguria, and both urine and stools contain large amounts of porphyrin. He knows of only twenty typical cases like these on record. A psychopathic or neuropathic element is known in at least seven of the cases; a hereditary factor only in one of the cases. The abdominal pains are evidently an intestinal neurosis. The ages ranged from 17 to 67. The relaxed abdominal walls, in contrast to the intense pain, is instructive. Necropsy in six cases showed nothing characteristic.

Tropical Malaria.—Seyfarth was for nearly three years of the war in charge of a malaria hospital on the Egean Sea, and he comments on the exceptional severity of the malaria observed there among his 7,000 patients and the numerous outpatients. The attacks may return after only a two or three hour interval, so that the fever is practically an irregular continuous fever, often speedily fatal. Sudden onset, with coma or with symptoms suggesting dysentery, was common. Tormenting, almost continuous tenesmus was noted in some cases. Blackwater fever was severe and often fatal, but it was never observed except in old chronic cases of malaria. All the blackwater fever cases occurred in the colder months. It seemed to develop in the predisposed when a certain limit had been passed in the taking of quinin, or there had been prolonged exposure to cold and dampness. In one case the erythrocytes dropped in four hours from 4.5 to 1.2 millions. In some cases only 500,000 or 800,000 could be found after the attack of hemoglobinuria. In others there were recurring attacks of hemoglobinuria. In some cases death occurred in twelve to thirty hours after the first symptoms; in one the seventh day. Necropsy in 208 cases showed pure malaria or blackwater fever almost without exception. In two cases the large spleen ruptured during massage by quacks, with fatal hemorrhage. In another case the spleen ruptured as the man jumped out of a car; in a fourth case the rupture occurred from a slight blow on the abdomen. Convalescents' serum did not prove as effectual as quinin in the ordinary cases, but in some of the severest comatose cases, apparently entirely hopeless, the serotherapy combined with intramuscular injections of quinin seemed to display a life-saving influence in a number of cases. After this combined quinin and antiserum treatment was introduced, there were no further fatal cases of malaria, although the proportion of the severer cases was even higher than during the years before.

Distribution of Indican in the Body.—Becher's research in this line showed that indican retained on account of insufficiency of the kidneys collects in the blood serum. There does not seem to be any special indican deposit in any tissue.

Concentration of the Serum and Viscosity of the Blood in Myxedema.—Deusch found in seven myxedema patients that the viscosity of the whole blood was within normal range, but the albumin content, the viscosity and the refraction coefficient of the serum were abnormally high. Under thyroid treatment, these figures returned to normal as clinical improvement became manifest. He regards this as a means of obtaining rapid oversight of conditions in regard to albumin metabolism. At least, it shows or disproves any great disturbance in the nitrogen transformations. It also enables us to classify the severer forms of myxedema, and to watch the effect of treatment with different forms of thyroid treatment.

Nephrosclerosis.—Fahr has been contending for some time that we must distinguish between a mild form of purely arteriolosclerotic changes in the kidneys and a malignant form (true contracted kidney). He here reviews 100 cases of the mild type and 40 cases of the malignant, pointing out that the 100 with the benign type were all over 50 except 3 in the forties, while of those with the malignant type, 1 was under 30, 10 under 40, 13 under 50, 13 under 60, and none were older than this. He warns against the modern tendency to regard hypertonia as a morbid entity when it is only a symptom. We should strive to differentiate the causal factors, to distinguish between a compensating and a direct pressor hypertonia.

Deutsche medizinische Wochenschrift, Berlin

Nov. 18, 1920, **46,** No. 47

Chemotherapy as Applied to Carriers of B. Typhosus and to Gallbladder Infections. P. Uhlenhuth and T. Messerschmidt.—p. 1293.
Effect on Brain Functioning of Substances Directly Injected. F. Breslauer-Schück.—p. 1295.
Operative Intervention in Cardiospasm. W. Mintz.—p. 1296.
The Jacobson-Holzknecht Phenomenon in Unilateral Bronchostenosis Caused by Fibroma. W. Pfeiffer.—p. 1298.
Cascade Type of Bilocular Stomach. H. Laurell.—p. 1300.
Adiposogenital Dystrophy. R. Pfeiffer.—p. 1302.
Roentgen Diagnosis of Subphrenic Suppuration. E. Lyon.—p. 1303.
Hospitalism in Foundling Homes. C. Harmening.—p. 1304.
Bilateral Herpes Zoster. P. Reckzeh.—p. 1306.
Early Diagnosis and Treatment of Duodenal Ulcer. F. Mendel.—p. 1307.
Epidemic of Dysentery in Thuringia. E. Jennicke.—p. 1308.
Roentgen-Ray Stimulative Doses. M. Fraenkel.—p. 1309.
Treatment of Alopecia Areata. Bibergeil.—p. 1309.
Health Resorts in Southern Spain. Rohleder.—p. 1310.
Pathogenesis and Treatment of Otosclerosis. L. Joseph.—p. 1311.
Diseases of the Eyelids. Steindorff.—p. 1312.

Deutsche Zeitschrift für Chirurgie, Leipzig

November, 1920, **160,** No. 1-2

Retroperitoneal Hernia. R. Beneke and A. Lorenz.—p. 1.
*Congenital Diaphragmatic Hernia. O. Aue.—p. 14.
*Atresia of the Anus and Rectum. H. E. Anders.—p. 36.
*Reconstruction of Soft Parts of Face. A. Lindemann.—p. 46.
Dislocation of Half of Pelvis; Wire Extension. W. Block.—p. 113.
Trauma and Peritonitis. H. Harttung.—p. 123.
*Operations for Hernia in Infants. J. Esten.—p. 127.
*Spinal Cord Tumors. H. von Lennep.—p. 137.

Congenital Diaphragmatic Hernia.—Aue reports a case in which an operation at the age of 9 cured conditions so that eighteen years afterward the young man was in apparently perfect health. In a second case in a boy of 5 the operation temporarily cured conditions, but the second step of the planned procedure was refused, and the child died two weeks later. There had been vomiting from the very first day after birth. In the first case Aue sutured the left portion of the slit while the right portion, back of and over the liver, was left

unmolested, except for introducing a strip of gauze to induce production of adhesions. The expanding lung evidently came in contact with the gauze which stimulated growth until the defect was definitely and solidly closed by adhesion of the lung to the edges of the slit. In the second case the gauze was not used, and the failure is attributed to this. In such cases it is impossible to plan your operation from the roentgen-ray findings alone.

Operative Treatment of Atresia of Anus and Rectum.—Anders relates experiences which demonstrate that if there is a depression in the anal region with atresia ani, we can count on the intestine being close to the anus, so that a plastic operation has every prospect for success. But if with atresia of the anus there is no indication of depression in the anal region, the intestine within is probably so remote that, for technical reasons, he advises to give up the idea of a plastic operation and make an artificial anus elsewhere. If with atresia of the anus there are indications of a sphincter muscle, then the rectum was originally approximately normally constituted, and the atresia developed in consequence of secondary processes. In this case, operative intervention has every chance for success. The absence of a sphincter muscle indicates that the blind end of the intestine never reached to the anus, and is probably high in the pelvic cavity.

Reconstruction of Soft Parts of the Face.—Lindemann concludes his long study of this subject by saying that if an autoplastic operation is not possible, it had better be considered whether it is not wiser to abandon the idea of a plastic operation, and to advise the patient to wear a rubber or other partial prosthesis to conceal the disfigurement.

Operations for Hernia in Infants.—Esten reports on the ultimate outcome of 101 operations for inguinal hernia in 85 children under 2 in the last eleven years. There has been recurrence in only one case, and the 3 deaths in the total 85 children can be explained by other causes.

Three Cases of Spinal Cord Tumors.—Lennep compares with these 3 cases, 153 from the literature—a total of 156 operative cases. About 33 per cent. were cured and 15 per cent. improved, but 33 per cent. died and in 11 per cent. no benefit followed the operation. Among 25 patients with intramedullary tumors, 28 per cent. were materially improved and 52 per cent. died. The outcome with 64 intradural tumors was 65.6 per cent. cured or materially improved, with 25 per cent. mortality. In 30 cases of vertebral tumors, 23 per cent. were improved and 50 per cent. died, including all the carcinoma cases and 3 of the 12 sarcoma cases.

December, 1920, **160**, No. 3-4

*Walking Splint with Elastic Extension. B. Chatzkelsohn.—p. 145.
*Reduction of Testicle with Short Cord. R. Sievers.—p. 159.
*Sarcoma of the Duodenum. H. W. von Salis.—p. 180.
*Factors in Gangrene from Chilling. E. Nägelsbach.—p. 205.
Osteotomy for Genu Varum Adolescentium. H. Hueck.—p. 245.
Primary Acute Suppurative Parotitis. F. Honigmann.—p. 252.
Profuse Hemorrhages from Tuberculous Kidney. Karewski.—p. 269.
Operation for Hemorrhagic Cyst in Spleen. W. Krause.—p. 273.
*Tuberculous Disease of the Ankle. D. O. M. Chiari.—p. 277.
*Simple Fracture of the Olecranon. R. Kötter.—p. 281.

Walking Splint with Elastic Extension for Fractured Leg.—Chatzkelsohn gives a number of illustrations and extols the advantages of the crutchlike splint which is applied from the crotch to below the sole, with an extension to serve as a crutch.

Reduction of Testicle with Short Cord.—Sievers does not attempt to lengthen the spermatic cord but shortens its path, by passing the undescended testicle through the obturator foramen. As the testicle is usually more or less atrophied, it can be readily passed through this opening, which much shortens the route to the scrotum. Another advantage of this is that the spermatic cord is thus removed entirely from the inguinal region, which is a great assistance in operations for hernia.

Case of Sarcoma of the Duodenum.—Salis comments on the difficulty of the diagnosis in the case of myosarcoma described in a man of 40. Its long course, seven years, seemed to exclude malignant disease, and the symptoms indicated pancreatitis or a pancreatic cyst. He compares this case with fifty-six articles on the subject in the literature.

Factors in Gangrene from Chilling.—Nägelsbach reviews 165 articles on this subject, and concludes that the direct action of the cold is sufficient alone to induce gangrene.

Tuberculous Disease of the Ankle.—Chiari reports a case which confirms the advantages of the Kirschner method, cutting down to the line of the Lisfranc articulation, from one malleolus to the other, across the dorsum of the foot, in plantar flexion. By this means the functional use of the foot was restored. The case encourages extensive resection in tuberculosis of the small bones of the tarsus.

Transverse Fracture of the Olecranon.—Kötter reports five cases of subcutaneous fracture of the olecranon cured by Hülsmann's method. The dorsal splint dressing is applied first in complete extension; for this a few whiffs of an anesthetic may be necessary. The dressing is taken off two days later. Then the upper tip of the olecranon is seized with thumb and forefinger, pushing aside the swollen parts, and the olecranon is pushed downward in the axis of the lower arm until the fractured surfaces are pressed together. The arm below the elbow and this upper fragment of the olecranon are then flexed slowly, as a composite whole, repeating this until the arm can be brought to a right angle. This movement is moderately painful at first. Then the dressings are applied again in complete extension. This procedure is repeated every two or three days until healing is complete. The results are surprisingly good. At every change of dressing it can be seen that the gap between the fragments is less and that the upper fragment follows the movements of the lower arm much more readily and with less pain. The dressing could be discarded after the fourth week. Bony consolidation of the fragments with complete restoration of function followed without exception, and the earning capacity was not reduced in any instance. In one of these cases the separation of the fragments and the effusion in the joint had been considerable.

Jahrbuch für Kinderheilkunde, Berlin

1921, **94**, No. 1

*Influence of Atropin on Action of Epinephrin. E. Schiff and A. Bálint.—p. 1.
*Open Meckel Diverticulum. Z. von Bókay.—p. 10.
*Tolerance for Grape Sugar in Children. W. Kahn.—p. 15.
*Constitutional Deficiency in Calcium. H. A. Stheeman.—p. 27.
Influence of Vitamins on Consumption of Oxygen by Cells. P. György.—p. 55.

Influence of Atropin on Action of Epinephrin.—Schiff and Bálint state that in a certain group of children with small, depressible pulse, epinephrin does not cause the usual rise in blood pressure. They experimented on other children and found that injection of atropin completely arrested the pressure-raising action of epinephrin. They theorize that this is due to the paralyzing action of the atropin on the myoneural junction. In the group of children with small, depressible pulse, this myoneural junction seems to be constitutionally inferior. One practical result of their experiments is that a preliminary injection of atropin may prevent the disturbances sometimes observed with epinephrin, as in a case described in which a boy of 13 with severe asthma developed syncope each time he was given an injection of 0.5 c.c. of the 1:1,000 solution of epinephrin.

Open Meckel Diverticulum.—Bókay gives an illustrated description of a case in which a healthy infant of three weeks died from the effects of prolapse and eversion of a long portion of the small intestine through the persisting vitelline duct.

Tolerance for Grape Sugar in Children.—Kahn gave children 100 to 150 c.c. of a 20 per cent. solution of grape sugar, fasting, or in the evening, and infants 160 c.c. in place of the last feeding of the day. He found that the infants displayed great tolerance for grape sugar. The lowest thresholds were between 6.7 and 11.1 gm. per kg., the highest between 13.5 and 17.5. At the age of 1½ years the limit of assimilation drops. In older children the average is only 3.5 gm. per kg.

Constitutional Calcium Deficiency.—Stheemann reports further research on what he calls the *calciprive constitution*, tabulating the details in forty-five children free from rachitis and in sixteen others with rachitis. He declares that subnormal conditions in regard to the calcium content of the blood and tissues is a typical "fatigue disease." The Erb

and Chvostek phenomena are signs of deficiency of calcium. They accompany a small calcium content of the blood. A low calcium content in the blood serum is a sign of previous calcium starvation and of present inadequacy of the calcium supply. But there may be calcium deficiency even with a high or normal calcium content of the blood; this occurs especially in rachitis. The use of cod liver oil and phosphorus may bring the calcium content down to normal to correspond with the actual calcium supply. The constitutional liability to disturbances in the calcium metabolism is revealed by the Erb and Chvostek phenomena when they are habitual. The manifestations of this constitutional calcium starvation are principally the signs of weakness in the sphere of the action of the nerves and glands, especially the trophic, endocrine, the digestive and the development glands. He adds that ample oversight is given of conditions by the calcium content of the blood. Galvanic examination is a simple and rapid method for determining calcium poverty, but the aspect of the child will usually reveal the status calciprivus. Tapping the motor point of certain nerves may aid in diagnosis, but we must not forget that these responses are inconstant, and are less reliable than the indications of the manifest adynamia.

1921, **94**, No. 2

Bacteriology of the Urine in Infants. H. Kleinschmidt.—p. 77.
*Infiltration of Child Lung. H. Eliasberg and W. Neuland.—p. 102.
Buttermilk in Infant Feeding. B. Leichtentritt.—p. 119.
*Intolerance for Cow's Milk. E. Rhonheimer.—p. 128.
Spontaneous Pneumothorax in a Child. L. Sior.—p. 131.

Gelatinous and Epituberculous Infiltration of the Child Lung.—Eliasberg and Neuland here present evidence as to the tuberculous nature of gelatinous infiltration found in an 18 months' infant. Necropsy showed it to have been the preliminary to cheesy processes. The child died from sinus thrombosis, and the lung process was thus discovered at an earlier date than had been previously encountered. In another infant of 6 months the gelatinous infiltration had developed suddenly also, and in three others the onset of the gelatinous infiltration occurred under their eyes. The sudden general phenomena and the rapid development of the infiltration are characteristic of this lobar gelatinous pulmonary process. The clinical picture of what they call epituberculous infiltration develops more gradually; they describe a case in an infant of nine months long under observation in the hospital. High fever, tuberculous foci in other parts of the lung, and tubercle bacilli are found with gelatinous infiltration, but were never found with this epituberculous infiltration. The gelatinous infiltration rapidly passes into acute caseation, the cheesy process complete in two or three months. The prognosis therefore of the two is widely different. The lobar infiltration in tuberculous children which disappears in time without leaving a trace, belongs to this nonspecific epituberculous infiltration group. Necropsy in one child of 11 months showed the complete absence of any tuberculous changes in the right lung although the infiltration in the right superior lobe had been noted for eight months. The disease process must be restricted to the interior of the alveoli in this epituberculous infiltration process. In one case the exudate consisted almost exclusively of small round cells. This epituberculous infiltration has never been observed yet except in children with tuberculous infection, although the process itself is evidently not of tuberculous nature.

Intolerance for Cow's Milk.—In the case reported by Rhonheimer the boy of 4 months developed severe urticaria and fever when given cow's milk, and also when given a commercial preparation containing milk casein. The phenomena resembled those of serum sickness so closely that an anaphylactic reaction must be assumed. The child was breast fed and the cow's milk was given only occasionally as supplementary feeding.

Münchener medizinische Wochenschrift, Munich

Nov. 26, 1920, **67**, No. 48

Cerebrospinal Fluid as Guide in Neurosyphilis. G. L. Dreyfus.—p. 1369.
The Use of Silver Arsphenamin. Naegeli.—p. 1372.
Manual Reduction of Prolapsed Umbilical Cord. Zangemeister.—p. 1375.
Disability Claims in War Neuroses. R. Tscherning.—p. 1376.
Antitoxin in Surgical Diphtheria. W. Bieber and H. Dieterich.—p. 1381
*Preservation of Complement. J. Hammerschmidt.—p. 1382.
Methylene Blue Test for Blood Sugar. W. Eisenhardt.—p. 1382.
Bothriocephalus Anemia. F. Herzog.—p. 1383.
*Kidney Decapsulation in Eclampsia. Lübbert.—p. 1385.
*Enrichment Chamber for Urinalysis. Pflaumer.—p. 1385.
"Use of Cautery in French Internal Medicine." A. Gallinger.—p. 1386.
"Milk Injections in Albuminuric Retinitis." R. Schmidt.—p. 1386.
"Can Germany Feed Herself?" M. v. Gruber.—p. 1386.

Preservation of Complement.—Hammerschmidt reports the results of his trials with Rhamy's method of preserving complement for Wassermann tests, as described in THE JOURNAL, Sept. 22, 1917, p. 973. Rhamy mixed fresh guinea-pig serum with a sterile 10 per cent. solution of sodium acetate in physiologic sodium chlorid solution in the proportion of 4:6. Hammerschmidt confirms that by this method complement can be preserved for at least ten days (possibly longer) without loss of strength.

Kidney Decapsulation in Eclampsia Postpartum.—Lübbert reports two cases of severe eclampsia in which decapsulation was performed in patients with marked albuminuria and oliguria. Both cases ended in recovery and Lübbert thinks that they confirm the value of the Edebohls method.

Enrichment Chamber for Microscopic Examination of Urine.—Pflaumer describes a method of enrichment which dispenses with the necessity of centrifuging.

Wiener klinische Wochenschrift, Vienna

Nov. 11, 1920, **33**, No. 46

*Spirochete Findings in Lymphatic Glands. R. Frühwald.—p. 999.
Adenotomy. J. Fein.—p. 1003.
*Blood Pressure After Lumbar Puncture. H. Kahler.—p. 1007.
*Physiology of the Secretion of Sweat. E. Freund.—p. 1009.
Case of Ileus Combined with Tubal Pregnancy Appearing a Second Time on the Same Side. F. Hanak.—p. 1010.

Spirochetes in Lymphatic Glands.—Frühwald reports the findings in 89 gland punctures done on a series of 83 syphilitics. In 20 of the 24 primary cases he found spirochetes in the regional inguinal glands, but not in the other 4 cases. Of the 18 patients who, beside the primary affection, had also an exanthem, only 7 presented spirochetes in the gland puncture. This is in line with the observations of other authorities that in the secondary stage the spirochete findings in the glands become less frequent. In old recurrent cases of syphilis he found spirochetes 7 times as compared with 20 negative findings. As secondary syphilis progresses, spirochetes in the glands become rarer, but the glands may shelter them up to the third year of the syphilis. In 4 cases of latent syphilis, after conclusion of treatment, puncture revealed spirochetes in 3 of the 14 punctures made. This group included one case with positive Wassermann in the third year of the disease, after three courses of mercurial treatment.

Rise in Blood Pressure After Lumbar Puncture with Cerebral Processes.—Kahler gives the results of a series of investigations, comprising twenty comparatively normal persons. In eighteen the blood pressure after lumbar puncture dropped at once—often considerably. On the other hand, in thirty cases of brain disease, in twenty-nine the blood pressure rose at once after the puncture. In two thirds of the cases the rise was at least 10 mm. and in one third, 20 mm. In one patient it ran up even 105 mm. of mercury. He theorizes to explain this difference in the behavior of the blood pressure after lumbar puncture, according as there is a cerebral process or not, and suggests that it may have diagnostic import.

The Physiology of Secretion of Sweat.—In investigations on epinephrin iontophoresis, Freund has made certain observations. On the back of his hand, he produced by means of an epinephrin solution (1:50,000) from the anode an anemic area corresponding to the field of the electrode. The current was 3 milliamperes, applied for five minutes. Immediately after the electrode was removed, the skin area corresponding to the field of the electrode was ivory white and dry, and occasionally goose flesh appeared. This hand was then put in a hot-air chamber, in order to observe the behavior of the anemic skin area under the influence of heat. When the heat had been applied for several minutes, the anemic area became covered with heavy drops of sweat, whereas the rest of the hand, although intensely reddened by the heat, had scarcely become moist. The intense secretion of sweat was sharply confined to the anemic area. This finding was not constant although it occurred frequently on repeated tests.

Zentralblatt für Chirurgie, Leipzig

Nov. 6, 1920, **47**, No. 45

Plastic Use of Celluloid in Skull Defects. E. Payr.—p. 1362.
Technic of Goiter Operations. E. Enderlen and G. Hotz.—p. 1365.
*Transplantation of Parathyroids. E. Borchers.—p. 1366.
Transverse Resection for Perforated Stomach Ulcer. D. Eberle.—p. 1368.

Transplantation of Parathyroids.—Borchers found that parathyroids are often confused with other bodies of similar appearance—more especially with accessory thyroid glands but also with lymph glands or fat lobules. He thinks this blunder is the main factor in explanation of the failures resulting from parathyroid transplantation. He had known for some time that such confusion might arise but not until recently did he learn the full magnitude of the danger. Now he has established a definite rule that no parathyroid transplantations be carried out without histologic control, as he no longer dares trust to the macroscopic appearance of the bodies.

Zentralblatt für Gynäkologie, Leipzig

Nov. 13, 1920, **44**, No. 46

Nagel-Veit's Gynatresia Theory. B. Otto.—p. 1306.
Vagitus Uterinus. H. Fuchs.—p. 1310.
A Type of Skin Suture. R. Asch.—p. 1314.
Incision for Alexander-Adam Operation. A. Hofmann.—p. 1315.
Protection of the Peritoneal Fold in Extraperitoneal Cesarean Section. W. Rübsamen.—p. 1316.

Mededeelingen v. d. Burg. Geneesk. Dienst, Java

1920, No. 5. German and English Edition

*Clonorchiosis. J. Mebius.—p. 2.
Serodiagnosis of Syphilis (Sachs-Georgi). J. A. De Nooy.—p. 98.

Clonorchiosis.—Mebius found *Clonorchis sinensis* in five of ten cadavers of Chinese examined at Batavia. He analyzes the clinical and necropsy findings, one case presenting parasitic cirrhosis such as Zwaardemaker has described in the dog. A number of photomicrograms of the parasites and their ova are given, and the differences between them and those of *Opisthorchis felineus* are emphasized.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

Jan. 15, 1921, **1**, No. 3

*The Resisting Power of the Erythrocytes. N. P. van Spanje.—p. 274.
Poisoning with Datura Stramoni Seeds; Two Cases. A. van Ravenswaay.—p. 298.
Epidemic Encephalitis; Two Cases. N. J. F. M. Konings.—p. 299.
*Medical Impressions of America. A. C. M. Beukers.—p. 334.

The Resisting Power of the Erythrocytes.—The resistance to osmotic changes of the red corpuscles is studied in connection with their number, size, hemoglobin content, the specific gravity, and the viscosity of the blood in different conditions. The changes in the resisting power of the erythrocytes are extremely pronounced in carbon dioxid intoxication, in anemia, etc., and instructive oversight is afforded by a comparison of the different values. A useful graphic method for recording this is with a small chart showing four graduated scales, one up to 10, one to 100, one to 70, and one to 120. The first scale records the viscosity, the second the volume, the third the specific gravity, and the fourth the hemoglobin percentage.

Medical Impressions of America.—Beukers visited the different medical centers and describes here his month with Harvey Cushing at Boston.

Acta Chirurgica Scandinavica, Stockholm

December, 1920, **53**, No. 2

Entero-Anastomosis in Intestinal Occlusion. R. Ingebrigtsen.—p. 105.
Amputation of Tibia. G. Borchgrevink.—p. 128.
*Operations for Cancer of Breast. E. Brattström.—p. 146.
*Lipomata of Jejuno-Ileum. A. Odelberg.—p. 154.
*Roentgen Diagnosis of Ostitis Fibrosa. S. Ström.—p. 175.

Operations for Cancer of Breast.—Brattström gives an excellent series of statistic tables, with description of a dozen selected cases. His material is derived from the period 1898-1915. The group 1905-1915 comprises 212 operative cases with 90 subsequent recurrences and death; 45 recurrences still under treatment, and 63 nonrecurrences. Comparative tables are made for data recorded in other hospitals. (In English.)

Lipomas in Jejunum or Ileum.—Odelberg describes five cases of lipoma; stasis may be a causal factor. The clinical symptoms usually are obscure, or wanting until the growth acquires a size sufficient to interfere with normal functions, when constipation, alternating with diarrhea, acute pain, vomiting, meteorism, all of short duration, but often repeated, occur. Then follows invagination, with chronic ileus, sometimes the very first clinical sign. Healing may occur spontaneously after evacuation of tumor; usually operation is indicated by the invagination symptoms. Tabulation of thirty-seven cases follows, with a bibliography. (In English.)

Roentgen Diagnosis of Osteitis Fibrosa.—Ström attempts a differential diagnosis of osteitis as differentiated from bone cyst. The former picture shows extensive alterations in the greater part of the affected bones, while the cyst is localized, and no alterations occur apart from the circumscribed cyst itself. Eight excellent illustrations accompany the description of cases with mention of the operative findings. (In English.)

Hospitalstidende, Copenhagen

Dec. 8, 1920, **63**, No. 49

*Growth of Bacteria and Reaction of Culture Medium. A. H. Johansen.—p. 777.

Dependence of Growth of Bacteria on Reaction of Culture Medium.—Johansen concludes from his research that most of the pathogenic bacteria can adapt themselves to a wide range of reaction. It is only necessary to approximate the neutral point on the alkaline side. He determined further that it is not the reaction alone that is responsible for the lack of growth of the gonococcus on ordinary agar. He worked mainly with the colorimetric method.

Hygiea, Stockholm

Jan. 16, 1921, **83**, No. 1

*Bence-Jones Proteinuria. A. Wallgren.—p. 1.
*Posttraumatic Serous Meningitis in Children. G. Lindberg.—p. 15.

Bence-Jones Proteinuria.—Wallgren's article supplements his study of multiple myeloma, summarized recently in these columns, page 488. The Bence-Jones protein may be found with endothelioma, bone marrow metastases of cancer, leukemia, etc. Disease in the kidney was evident in all of the fifty-two cases of the proteinuria tested. The Bence-Jones proteinuria was found in all but a few of 118 proved cases of myeloma, and is thus an important aid in the diagnosis, and even in forecasting the onset of multiple myeloma. The proteinuria may be intermittent.

Posttraumatic Serous Meningitis in Children.—Lindberg's two cases are instructive from the standpoint of treatment. Lumbar puncture put an end to the symptoms suggesting severe acute meningitis. They had developed a few days after the boys, 10 and 4, had had a fall, hitting the head. The diagnosis would have been tuberculous or purulent meningitis if lumbar puncture had not shown the normal fluid under extremely high pressure. He has had a case in which tuberculous infection had induced merely a serous meningitis and the patient recovered, as also in four cases of the kind in Göppert's service.

Ugeskrift for Læger, Copenhagen

Jan. 6, 1921, **83**, No. 1

Roentgen-Ray Examination for Duodenal Ulcer. H. J. Panner.—p. 4.
*Mortality from Tuberculosis. C. Jensen.—p. 13.
Antistreptococcus Serum Treatment of Pyemia. Hansen.—p. 15.

Mortality from Tuberculosis.—Jensen compares the mortality by five year periods from 1890 to date in Copenhagen, in the various provinces, and for the whole country. The total mortality has dropped for the whole country by 31.05 per cent. and in the mortality from pulmonary tuberculosis the decline has been 47.12 per cent. In the provinces, the corresponding figures are 29.49 and 54.10 per cent. In Copenhagen alone, 32.84 and 37.22 per cent. The total mortality for the whole country thirty years ago was 19.78 per thousand inhabitants; for the provinces alone, 19.013, and for Copenhagen, 20.782. The corresponding figures now are 13.639; 13.407, and 13.957.